CHYRON CORPORATION
VIDEO PORTABLE PRODUCTS DIVISION

CHYRON®

VP-1

OPERATING MANUAL

CHYRON VIDEO PRODUCTS
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CHANGE RECORD

Change No.	Date	Brief Description	Affected Pages	Approved By
1	Jan. 1983	- Include figures showing 'Fine Phase' adj. and 'Sync' adj. potentiometers and their related functions.	Title CR-1,CR-2	
		- Include synchronization of 'Request to Send' and 'Clear to Send' signals on RS232 connector.	I thru V 3-1 thru 3-5, 3-9 thru 3-11	
		- Include table showing alternate wiring for RS232 cable(Table 3-2).	4-2, 4-7 4-15, 4-16 4-17, 4-18	
		- Change Character offset and Drop Shadow edge type values from -10 to 10, to -16 to 16.	4-25, 4-26 7-5, 7-11 7-18	
		- Include 'Bar Graph' capabilites using edge type(Section 4.5.3).	A-1, A-2	
		- Include Character Space command SPn (Section 4.8.6).		
		- Include Space Line command LSn (Section 4.8.7).		
		- Change Photograph Appendix from eight pages(A1 to A7) to two pages (A1 to A2).		

CHANGE RECORD

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SECTION 1

VP-1 PREFACE

The VP-1 is the highest quality low cost character generator available today. Some of its features are:

- Provides true camera captured character fonts at a resolution of 35nsec. from a font library of 50 fonts.

- Up to 6 digitized fonts can be displayed at one time.

- Selection of 8 colors from a variety of 64 color shades for background, characters, and edges.

- Operates with any computer system capable of generating serial data (RS232) output. Most personal computers satisfy this requirement.

- Provides many special effects. Background color by scan line, italics, freedom of character placement, drop shadows, borders and font logos.

- All functions operate with a simple command language which is easily embedded into the text file.

- Local memory will hold 4000 characters for display.

- Provides Gen lock and keying over of external video source.

This manual will provide step by step instructions for all features of the VP-1 and their usage.

VP-1 TECHNICAL NOTES

VIDEO INSTALLATIONS

The Chyron VP-1 is designed to be applicable to a wide range of video installations. The following document explains three basic configurations for interfacing the VP-1 with an existing video system. All references to the VP-1 operators manual will coincide with the latest edition of the manual available (Rev. 0 Change 2).

STAND ALONE OPERATION

A basic video application of the VP-1 is as a stand alone video source (figure 1). In this configuration, the user does not input an external video signal to the unit. The VP-1 will supply its own video signal for operation in this mode. The 'Preview Out' channel of the VP-1 is used to supply graphics to one or more output devices (NTSC monitors, video tape recorders, etc.). Therefore, no connections should be made to the 'Video In' and /or 'Program Out A or B' channels, as both channels are inactive.

DOWNSTREAM KEYER OPERATION

In downstream keyer operation, the internal keyer circuit of the VP-1 is used to insert the VP-1 graphics into the opeartor's video program (which must be NTSC composite video). The 'Video In' channel is used to connect the operator's video signal to the VP-1 unit (figure 2). The incoming program is passed through the VP-1 with a small fixed delay, produced by the unit. The combined video signal from the VP-1 (incoming video program and VP-1 graphics) is connected to the output devices (NTSC monitor, video tape recorder, etc.) via the 'Program Out A or B' channels.

In downstream keyer operation, the incoming video signal sync and burst are used on the program outputs. The VP-1 internally generated sync and burst signals are not used.

DOWNSTREAM KEYER OPERATION:(continued)

An optional on-off switch can be used to control the insertion of VP-1 graphics into the user's video signal. This switch can be connected to the rear panel of the VP-1 at the external events connector(see operator's manual). When the insert switch is closed, the VP-1 internal keyer circuit is disabled allowing the user's video signal to be output to the 'Program Out A or B' channels without the VP-1 graphics signal inserted. This switch can be held closed until the operator wishes to insert the VP-1 graphics. When the switch is opened, the graphics will appear combined with the program video at the 'Program Out A or B' channels.

Before the graphics signal generated by the VP-1 is combined with the incoming video signal, a monitor can be connected to the 'Preview Out' channel on the unit. This will allow the user to visually check for errors in the graphics signal, while the optional on-off switch is on (switch closed).

In the Downstream keyer configuration, the VP-1 must be gen locked to the user's video signal. The VP-1 contains built-in circuitry to gen lock to an NTSC composite video signal. Examples can be a color camera or one inch video tape recorder (with no time base correction), or a video cassette recorder (with a time base correction).

The VP-1 unit must be sync locked to the incoming video signal. This can be accomplished by using the 'sync adjust' potentiometer on the VP-1 unit (refer to section 3.6 of the operators manual). Remove the input video signal and turn the potentiometer completely counter-clockwise. Reconnect the input video signal to the unit. Slowly turn the potentiometer clockwise, until the L.E.D. (above the potentiometer) first lights to its brightest intensity without flickering. It may be necessary for the user to readjust the sync lock whenever the VP-1 unit is powered on or when the incoming video signal is interrupted.

DOWNSTREAM KEYER OPERATION:(continued)

Once the VP-1 has been sync locked to the incoming video program, the hue of the VP-1 graphics may need to be adjusted in relation to the program video. The 'fine phase' potentiometer may be used to adjust to the proper hue (phase). If the proper hue can not be achieved, the user can change the pin out on connector P3 on the VP-1 video P.C. board. The jumper wire on connector P3 (pin 2) can be moved to either pins 3, 4 or 5 of the connector to adjust the hue (each jumper position provides a 90 degree shift in the VP-1 chroma phase) on the VP-1 graphics signal (refer to the operators manual section 3.6 for more information).

UPSTREAM OPERATION

In upstream operation, the VP-1 is used to provide a video signal to the input of a video production switcher. The VP-1 is gen locked to a master reference source via the 'Video In' connector. The VP-1 internal downstream keyer is not used in this application.

The 'Preview Out' channel of the VP-1 should be used as the video source to the switcher for all upstream applications (figure 3). The keyer in the video switcher should also be configured for 'external' operation. The VP-1 connects to the external key input of the switcher via the 'Key Out' connector on the VP-1 chassis. This will enable the user to control the external keyer circuit in his switcher with the VP-1 software 'key' commands.

? BEØ ICCØ ON EXTERNAL EVENTS SW ???

NOTE: Since the output from the 'Program Out A or B' channels passes the incoming video signal with a small fixed time delay, these two channels can not be used as an upstream source. If used, the 'Program Out A or B' channels will cause a horizontal phase delay mismatch at the video switcher inputs. If it is necessary for the user to use these channels in the upstream operation, all inputs to the video switcher must be delayed to match the VP-1 'Program Out A or B' horizontal phase timing.

USE EXTERNAL KEY IN SWITCHER

GEN LOCK = VIDEO IN

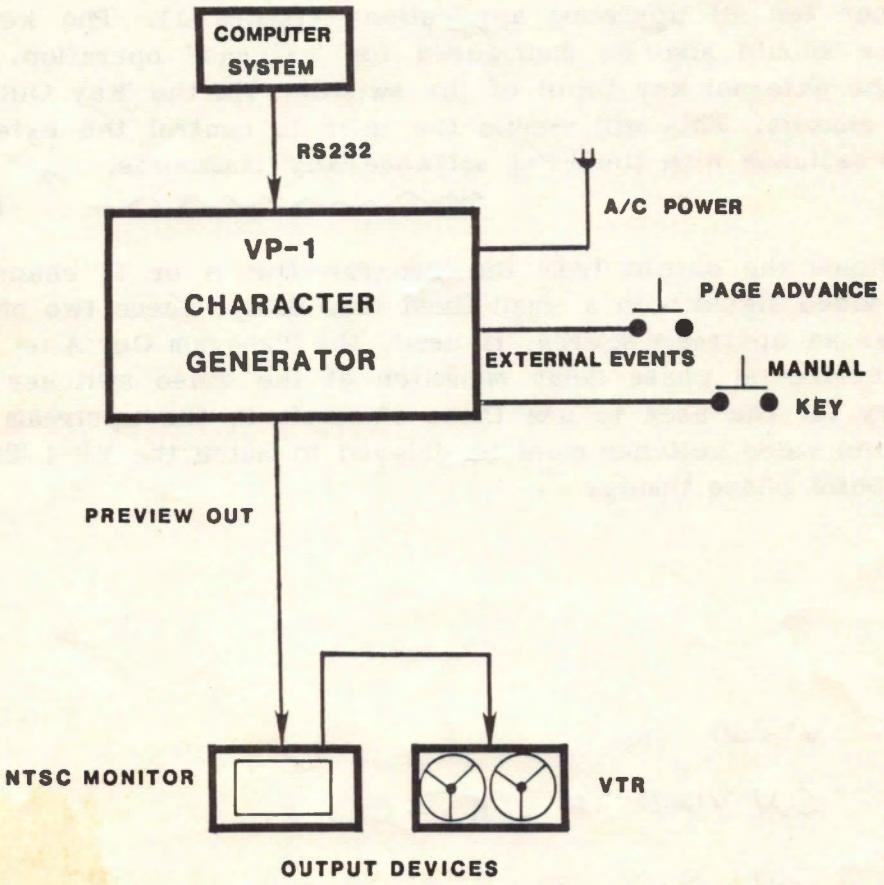
PREVIEW OUT = SW VIDEO IN (CH5-CB)

VP1 KEY OUT = SW KEY IN.

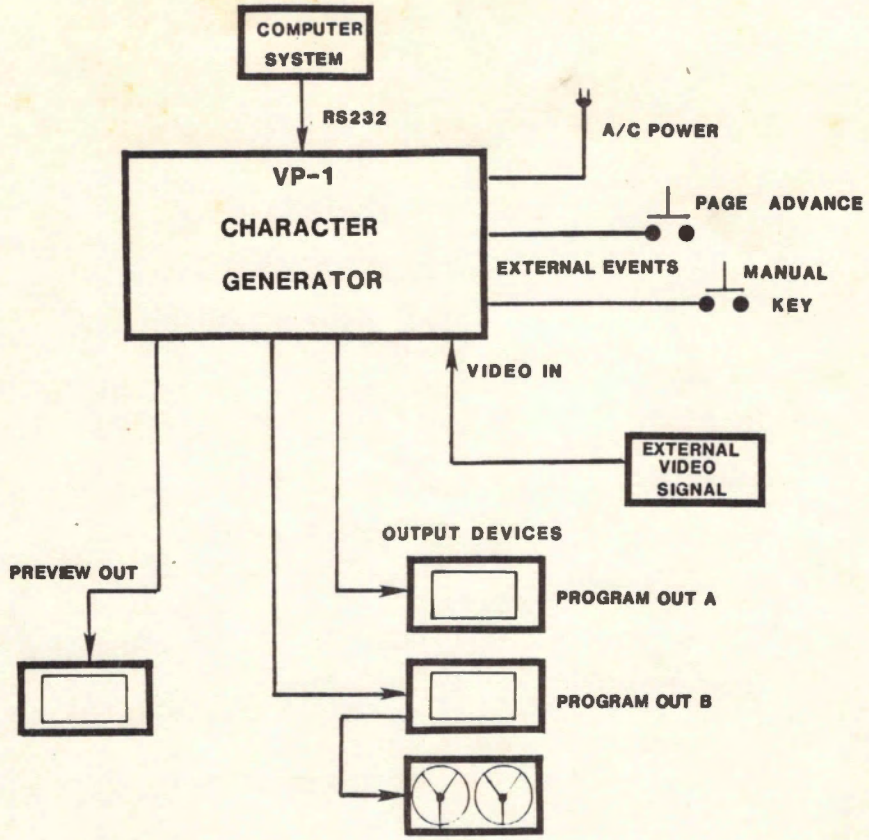
UPSTREAM OPERATION:(continued)

NOTE: Although the VP-1 provides no adjustment for horizontal phase timing, the unit's built-in gen lock circuitry guarantees the falling edge of the horizontal sync pulse (on the output video signal) to be within +/- 100ns of the falling edge of the horizontal sync pulse on the incoming video signal. If a closer horizontal phase timing is necessary, the horizontal phase of the incoming video signal to the VP-1, should be adjusted accordingly.

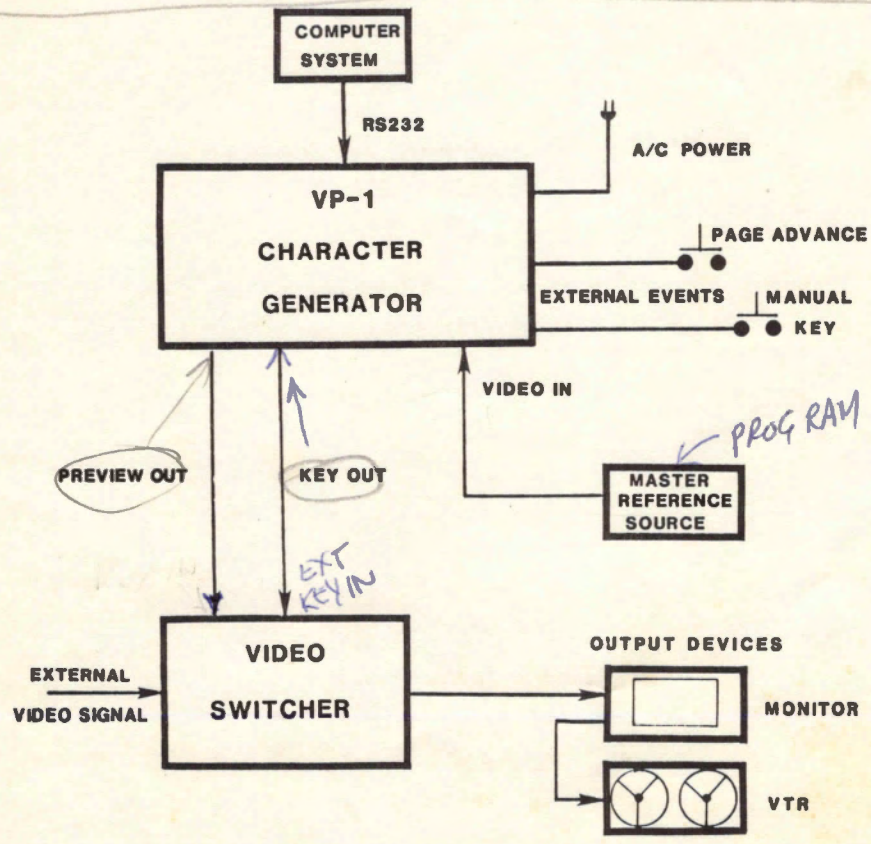
When the VP-1 is properly configured for upstream operation, the operator may wish to set the VP-1 color burst phase to be coincident with the interfacing video system. To adjust the color burst phase, use the 'fine phase' potentiometer inside the VP-1 chassis. If the proper adjustment can not be made, refer to the downstream keyer section of this document for information on moving the pins on connector P3 of the analog P.C. board, to get the proper color burst phase. If additional adjustment is required, the length of the cable going into the 'Video In' connector (from the master reference source) can be changed to trim the VP-1 sub carrier phase.



STAND ALONE OPERATION



DOWNSTREAM KEYER OPERATION



UPSTREAM KEYER OPERATION

SECTION 2

VP-1 INTRODUCTION

The Chyron VP-1 provides the ability to compose and display video messages when connected to the serial communications port(RS232C) of any computer system, that can operate a text editing or word processing program.

Messages are created by typing text with properly placed VP-1 commands included. These messages may be stored at the computer system for later recall when needed. Messages may also be organized into a multi-page file that can be transmitted to the VP-1 for continuous display. The VP-1 will store up to 4000 characters in its local memory to support multiple pages. The dwell time of each page can be controlled by a command in the text. Also, the file of pages may be repeatedly displayed by the addition of a command to the text.

The command language provides for control of color selection for backgrounds, characters, logos and edges. A color palette of 64 color shades is provided and any of these colors may be selected as the Palette Colors(a total of 8) for a text page. Margin control is also provided with top, bottom, left and right margin sets available.

The VP-1 includes two fonts; a digitized 18 line Helvetica Medium and a 30 line Helvetica Bold. The fonts contain full upper and lower case character sets. Optionally, up to six fonts may be used at one time, all which can be ordered from the Chyron font library. The font in use is selected by a command and may also be italicized left or right by another command.

Three edge types can also be selected by command; character offset, drop shadow and surround border. The width and direction of each edge type can be varied.

The position of text can be controlled by the presence of skip, jump, forward or back space, tab, center line and center page commands.

The VP-1 will Gen lock to a stable external video source and will key over this video source when a color is assigned by a command as the key color. Whenever this color occurs in the display, it will be replaced by the video source.

SECTION 3

INSTALLATION

The VP-1 character generator is contained in a chassis that is 3.5 inches high, 17 inches wide and 19 inches deep. It may be rack mounted with the optional brackets that are included when shipped or it may be placed on a table top, in which case a set of rubber feet are provided.

The speed of data transmission, known as the Baud Rate, is adjustable from 75 Baud to a maximum of 9600 Baud.

3.1 CABLES

The unit will connect to a computer system with a standard 9 wire RS232C cable and to a video system with a 75 ohm coaxial cable terminated with BNC connectors. The unit will connect to any standard 115 volts A.C. power outlet and will consume less than 100 watts of power.

When the VP-1 is used as a stand alone unit(using no key or external video sources), the 'Preview Out' BNC connection is used as the video output to the display. When an external video and sync pulse are input to the VP-1, Program channels A and B are used to output the display video signal. The 'Preview Out' channel will only output character generation from the VP-1 at this point. The Program channels A and B will show the key colored video output.

The following diagrams(figure 3.1 and 3.2) illustrate the rear panel and internal layout of the P.C. Boards, cables and connecting points of the VP-1 chassis.

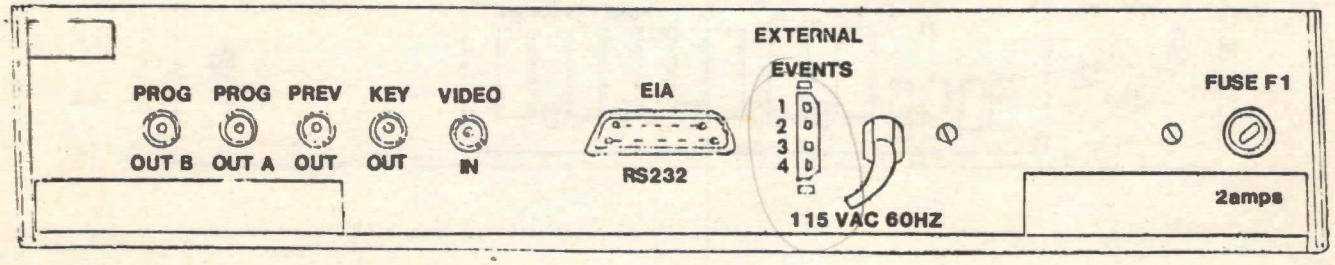


FIGURE 3.1

3.1 CABLES(continued):

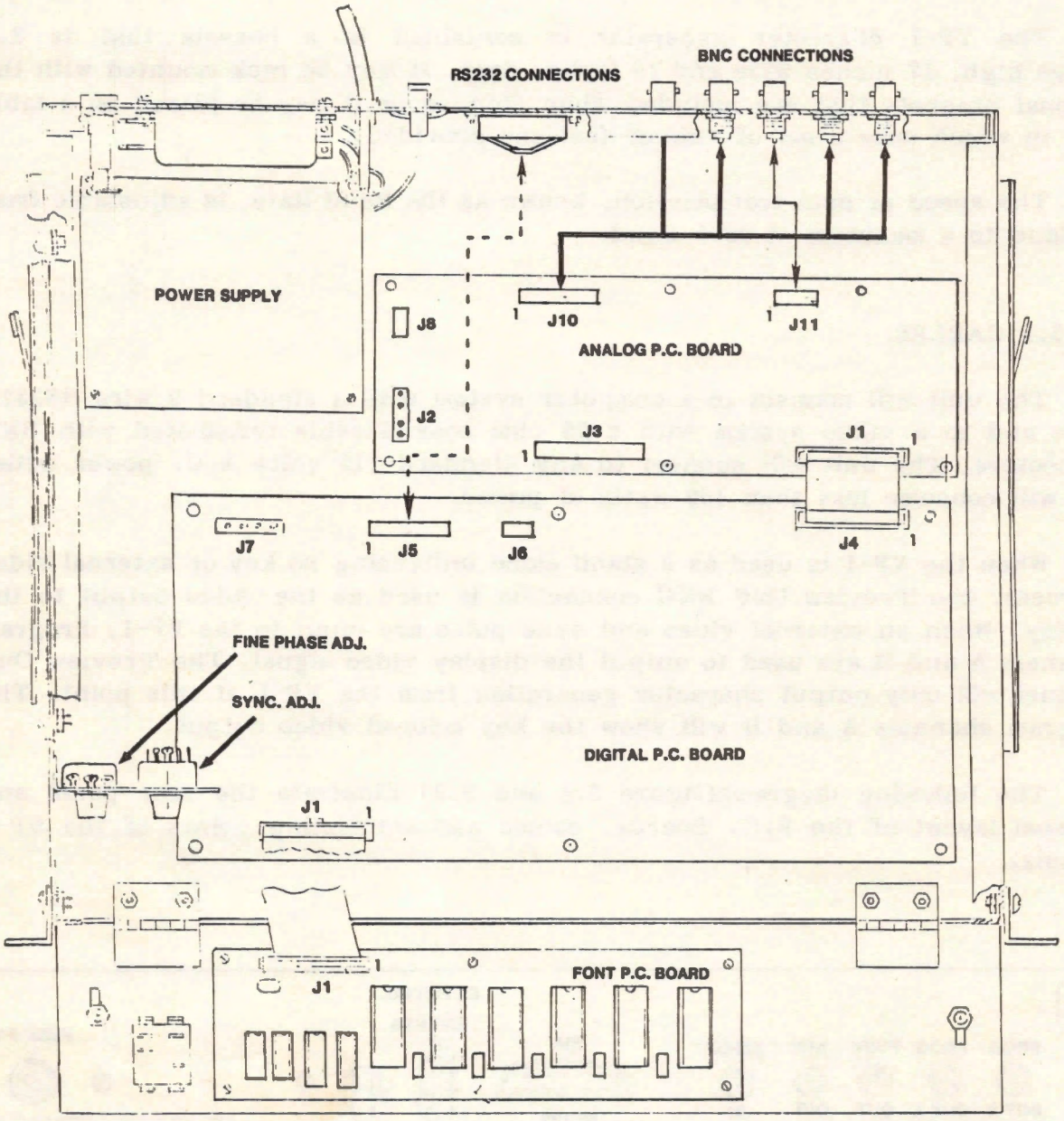


FIGURE 3.2

3.2 CONNECTIONS

A.) BNC Coaxial Connections:

Video In	- connects to source video.
Key Out	- connects to key input of video switcher.
Prevue Out	- connects to prevue video monitor.
Program A, B	- connects to output video devices.(one program out can be used to monitor output.)

Note: Gen Lock configuration of the video input signal must be NTSC composite video or black burst signal for the VP-1 to operate properly.

B.) Other Connections:

External Events - manual key(pins 3 and 4)

- manual page advance(pins 1 and 2)

C.) D - Type 25 Pin Connections:

EIA RS232 - connect to computer system(see figure 3.3)

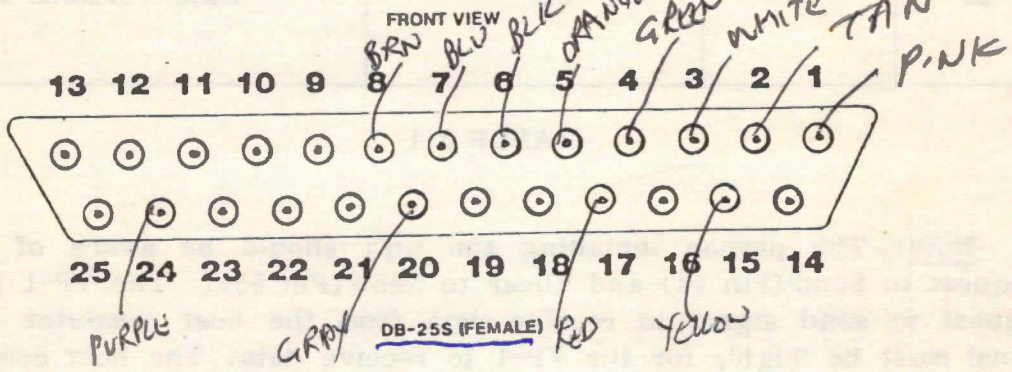


FIGURE 3.3

The following table shows the proper pin numbers and signal names on the 25 pin D - type connector being used to connect the serial data line(RS232C) from the VP-1, to the host computer system. The operator should note that in some installations, pins 2(Transmit Data) and 3(Receive Data) are reversed at the host computer end. Refer to table 3-2 for the proper pin configurations when this situation occurs. The operator should consult the computer system technical manual to verify the proper configurations of all signal pins on the connector.

PIN CONFIGURATION (RS232 CABLE)

FROM	TO	SIGNAL NAME	DESCRIPTION
1	1	AA	Protective Ground
2	2	BA	Transmit Data
3	3	BB	Receive Data
4	4	CA	Request to Send
5	5	CB	Clear to Send
6	6	CC	Data Set Ready
7	7	AB	Signal Ground
8	8	CF	Rec Line Signal Detect
20	20	CD	Data Terminal Ready

TABLE 3-1

Note: The person installing the unit should be aware of two signals; 'Request to Send'(Pin #4) and 'Clear to Send'(Pin #5). The VP-1 generates the request to send signal to receive data from the host computer system. This signal must be 'high', for the VP-1 to receive data. The host computer system generates the clear to send signal, which must be 'high' to transmit data. If either signal is low or not active, the VP-1 will not transmit or receive data for the display.

The 'Clear to Send' signal on the VP-1 RS232 connector (Pin #4), is synchronized to the output from the 'Clear to Send' signal (Pin #5) on the host computer system. This allows the uninterrupted transmission of message files from the host to the VP-1 (see Section 5.1)

3.2 CONNECTIONS:(continued)

Some computer systems differ in pin configurations for the RS232 signal cable. If the pin assignment for the RS232 cable does not match the configuration in table 3-1, a special cable may be required to connect the host computer system to the VP-1 unit. The operator can make this particular RS232 cable for the VP-1, according to the following table. Only the pins that are indicated should be connected. None of the other pins are used.

PIN CONFIGURATION

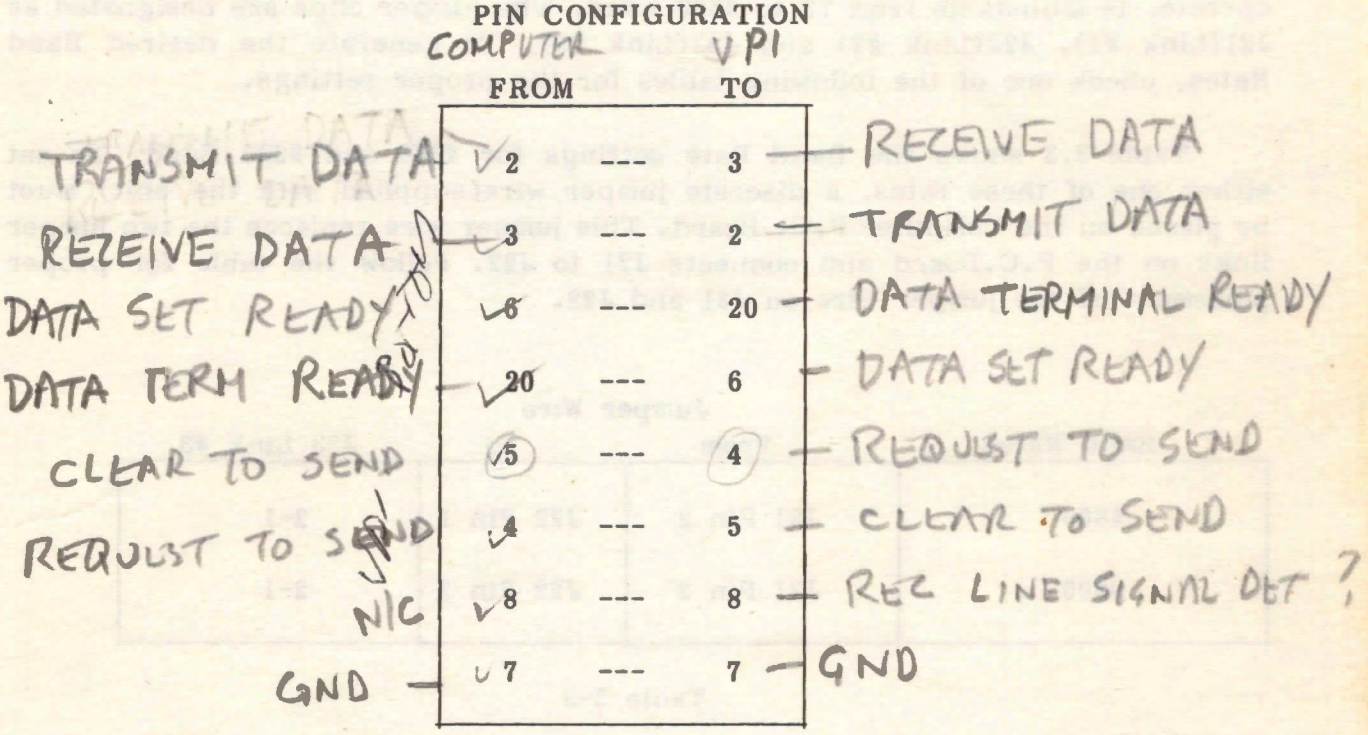


TABLE 3-2

3.3 COMMUNICATION BAUD RATES

The Communication Baud Rate for the VP-1 is set to 9600 Baud before being shipped. If the host computer system being used is not set to 9600 Baud or if the operator wants to change the existing baud rate, the operator can either change the baud rate on the computer system or on the VP-1. There are three jumper clips located on the Computer P.C.Board(figure 3.4), which can be moved to generate the desired baud rate on the VP-1.

By arranging the three jumper clips, the Baud Rate which the VP-1 can operate, is adjustable from 75 to 9600 baud. The jumper clips are designated as J21(Link #1), J22(Link #2) and J23(Link #3). To generate the desired Baud Rates, check one of the following tables for the proper settings.

Table 3.3 shows the Baud Rate settings for 4800 and 9600 Baud. To set either one of these rates, a discrete jumper wire(supplied with the unit) must be placed on the Computer P.C. Board. This jumper wire replaces the two jumper links on the P.C.Board and connects J21 to J22. Follow the table for proper placement of the jumper wire on J21 and J22.

Baud Rates	Jumper Wire From	To	J23 Link #3
4800	J21 Pin 2	J22 Pin 1	2-1
9600	J21 Pin 2	J22 Pin 3	2-1

Table 3-3

To set the remaining Baud Rates(75 to 2400), follow Table 3.4 for the proper settings. These Baud Rates are set by placing the three jumper links in the proper locations. The discrete jumper wire is not used.

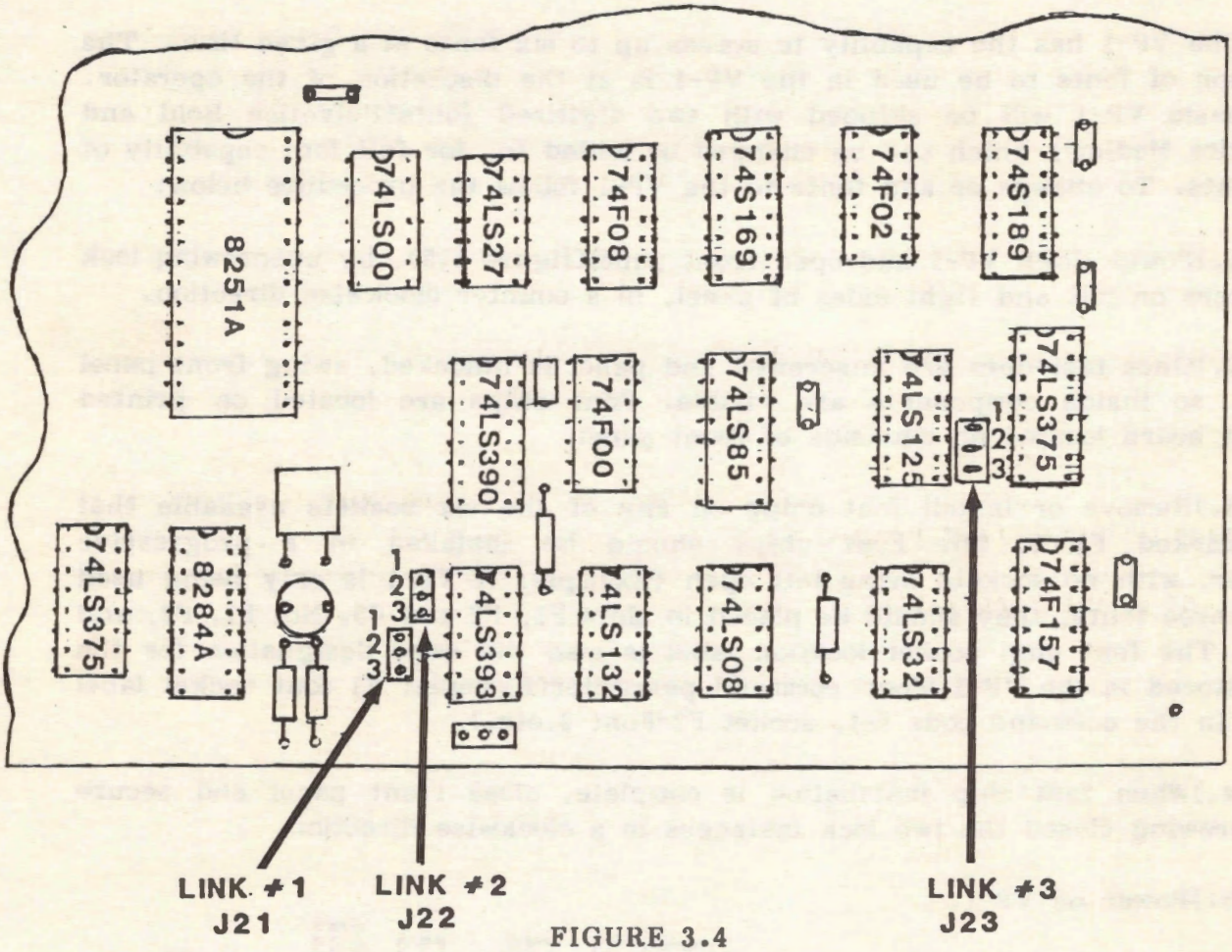


FIGURE 3.4

BAUD RATE	J21 LINK #1	J22 LINK #2	J23 LINK #3
2400	2 - 1	2 - 3	2 - 1
1200	2 - 1	2 - 1	2 - 1
600	2 - 3	2 - 3	2 - 1
300	2 - 3	2 - 1	2 - 1
150	2 - 3	2 - 3	2 - 3
75	2 - 3	2 - 1	2 - 3

TABLE 3-4

3.4 FONT CHIP INSTALLATION

The VP-1 has the capablity to access up to six fonts at a given time. The selection of fonts to be used in the VP-1 is at the discretion of the operator. The basic VP-1 will be shipped with two digitized fonts(Helvetica Bold and Helvetica Medium) which can be changed or added to, for full font capability of six fonts. To change or add fonts to the VP-1 follow the procedure below:

1.)Power down VP-1 and open front panel(figure 3.5), by unscrewing lock fasteners on left and right sides of panel, in a counter clockwise direction.

2.)Once fasteners are unscrewed and panel is unlocked, swing front panel down, so inside components are visible. Font chips are located on printed circuit board located on backside of front panel.

3.)Remove or install font chips on any of the six sockets available that are marked F1 to F6. Font chips should be installed in a progressive manner, with no sockets being left open (Example: If VP-1 is only being used with three fonts, they should be placed in slots F1, F2 and F3. Not F1, F2, and F4.). The font chip socket location label is also the same designation for the font stored in the VP-1 'Font' command parameter(Example: F1 font socket label is F1 in the command code set, socket F2=Font 2,etc.).

4.)When font chip installation is complete, close front panel and secure by screwing closed the two lock fasteners in a clockwise direction.

5.)Power on VP-1.

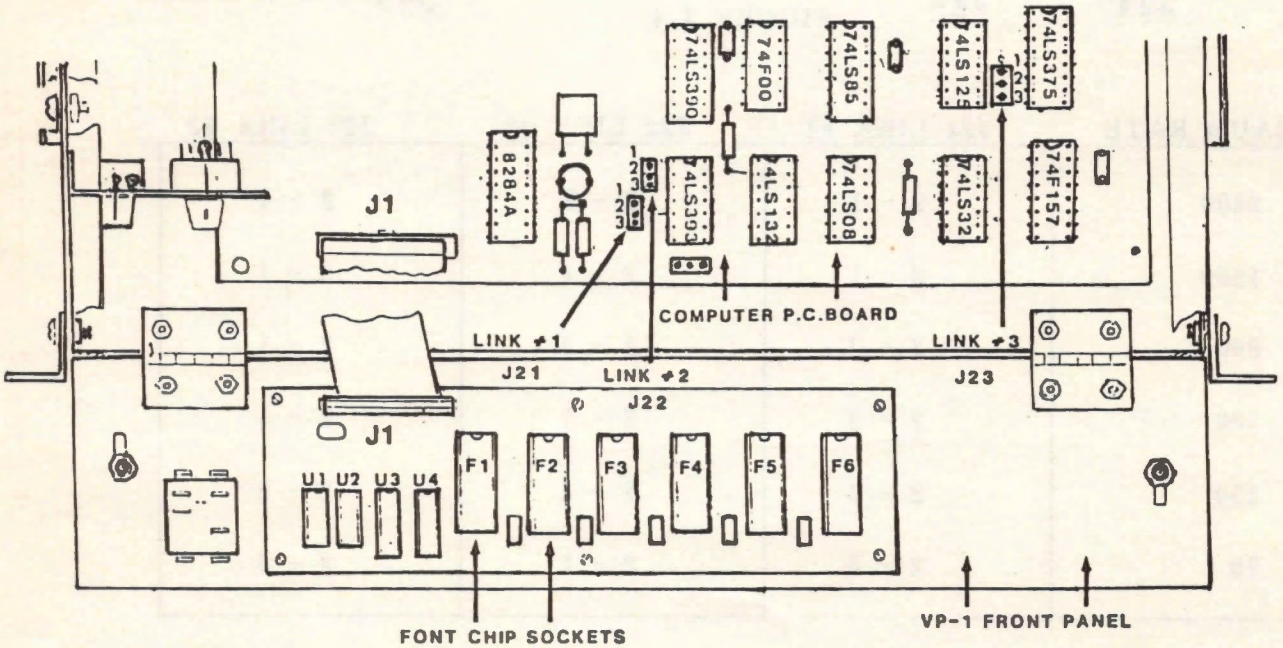


FIGURE 3.5

WARNING !

Care should be taken by the operator to install the font chips correctly into the font chip sockets. Sockets have been keyed to prevent accidental damage to font chips being installed. If font chips are installed incorrectly, damage to chip and font program will result.

3.5 POWER ON DIAGNOSTICS

The purpose of the 'power on' diagnostics are to indicate that the VP-1 is functioning properly. The display will show the operator which fonts are available and the position number at which each font is located. Through a series of changing color stripes, the operator is informed that access of all 64 palette color shades is possible.

When the VP-1 is powered on, a blank blue screen will appear. Subsequently, the blue screen will be replaced by a display consisting of six stripes; blue, green, cyan, red, magenta, and yellow. The word "FONT", along with a number(1-6), will be shown in the corresponding style of each available font being used by the operator. The background stripes will begin to continually change colors until a text message is sent to the VP-1 by the operator(see photograph on page A-2 for Diagnostic Display).

Once the above display has appeared, the operator can start sending text pages, files or messages to the VP-1 from the computer system. Attempts to display a message before the appearence of the Readiness Display, during the Diagnostics, will be ignored by the VP-1.

The appearance of a red screen after the initial blue screen indicates that the VP-1 is not functioning properly. Messages transmitted to the VP-1 in this condition may be displayed with some errors, or not at all.

3.5 POWER ON DIAGNOSTICS:(continued)

When the VP-1 has been powered up and is shown to be functioning properly, the operator may need to adjust the sync phase for the video signal and/or the color intensity of the output display. To adjust either one of these functions, two potentiometers have been placed inside the VP-1 chassis(see figure 3.2 to see the location of these two potentiometers).

To adjust the sync pulse; slowly turn the potentiometer marked 'Sync Adjust' either clockwise or counter-clockwise, until the L.E.D. lights. This shows that the VP-1 has locked to the internal or external sync pulse.

To adjust the color intensity; slowly turn the potentiometer marked 'Fine Sync Adjust' either clockwise or counter-clockwise, until the desired color intensity has been obtained.

If the operator can not adjust the potentiometer to obtain the desired color intensity, the jumper wire on connector P3(located on the analog P.C. Board(figure 3.2)) can be moved. By moving the jumper wire between pins 2 and 6 on connector P3, to another pin location on the connector, the operator can adjust the 'Fine Sync. Adjust' potentiometer for the color intensity. The operator can remove pin 2 from the connector and insert it into either pins 3,4 or 5(the other end of the jumper remains in pin 6) to create the desired color intensity(Refer to figures 3.5 and 3.6 for the two potentiometers and pinouts on connector P3).

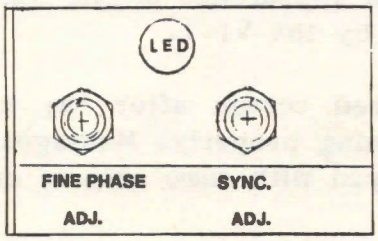


FIGURE 3.5

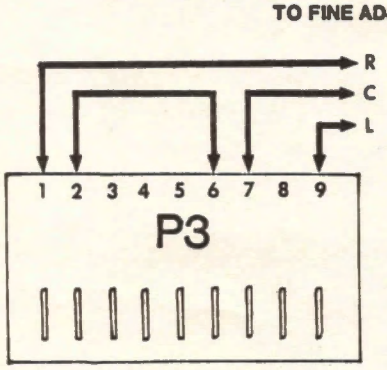


FIGURE 3.6

3.6 DEFAULT PARAMETERS

After the VP-1 has been powered on and the readiness diagnostics have indicated the system is operational, all the command functions are set to an initial group of values called "Default Parameters". These parameters can be changed at any time by the operator using valid and proper command structure while composing text for the message file. The default parameters are reset at every power on of the VP-1

- Background Color: White
- Character Color: Black
- Font Selection: Font 1
- Character Space 6 Pixels
- Line Space 0 Scan Lines
- Top Margin: Scan Line 30
- Bottom Margin: Scan Line 452
- Left Margin: Pixel 100
- Right Margin: Pixel 1414
- Italics: Off
- Edge Type: Off
- Edge Color: Black
- Key Color: Inactive
- Palette Selections:
  0= Black
  1= Blue
  2= Green
  3= Cyan
  4= Red
  5= Magenta
  6= Yellow
  7= White

Note: The margins set at the default parameters are those for standard 'safe title area', for text display.

SECTION 4

COMMAND SET

The command set recognized by the VP-1 is the basis for which the operator can compose a message file for display. The operator can compose a message file by using the VP-1 with a word processor, text editor or word processing program used by a host computer system. A message file is composed of a set of VP-1 commands and text typed by the operator.

Every set of commands starts with the symbol < and ends with the symbol >. If these symbols are not incorporated into the beginning and end of a command sequence, it will not be recognized by the VP-1. If more than one command is required, commands can be combined into a group called a "string", as long as each command is separated by a space.

Text should be typed after the command string(see section 5.0). If a space or return is used to separate text from commands, the space or return will appear as part of the text when the message is displayed. Text requiring no preliminary commands must begin with a start and end symbol <>, before text is typed. The operator determines the page length or break point by the use of either the 'End of Page' or 'End of Message' commands.

The amount of pages for a message file is only limited by the local memory of the VP-1(4000 characters). If too many complex messages are composed by the operator, the available memory space can be exhausted. This can result in the loss of text for display from the VP-1.

The following commands are available to the operator, using the VP-1. They are clearly defined in the following sections.

Section 4.2		Section 4.3	
End of Message	EM	Color Palette	PAn=xyz
End of Page	EP	Background	BCn(y1)
Page Delay	PDn	Characters	CCn
Repeat Message	RM(n)	Edge Colors	ECn
Default Reset	DEF		

Section 4.4		Section 4.5	
Fonts	Fn	Edge types	ET
Italics	ITn		

Section 4.7

Center Line	CL(n)
Center Page	CP(n)

Section 4.8

Skip	SKn
Forward Space	FSn
Back Space	BSn
Jump Absolute	JMPx,y
Tab	TBn
Line Space	LSn
Character Space	SPn

Section 4.9

Top Margin	TMARGn
Bottom Margin	BMRAGn
Left Margin	LMARGn
Right Margin	RMARGn

Section 4.10

Key Color	KCn
Disable	KD

Section 4.11

Roll RLn

Section 4.12

Page Advance WAIT

In all of the following command explanations, the letter 'n' after a given command, will represent a variable number to be assigned by the operator. Variables in parentheses (n), are optional values for certain commands. The command can be used with or without the variable number designated by the operator. Although shown in upper case in this manual, commands can be typed in either upper or lower case characters.

Most command selections will remain in effect throughout a message file or until that particular command is changed or reassigned. The commands 'Center Page' and 'Roll', are canceled at the end of a message page. The following commands are automatically canceled at the end of a text line.

Italics ITn Center Line CL Tab TBn

Example: If the operator types a background color of white BC7 and a Helvetica Bold font F1, the VP-1 will use these commands(parameters) for the entire text message or until the VP-1 is powered down. This can only be changed when the operator desires to retype new values for the background color and fonts in the command string sequence.

4.1 NOTATIONAL CONVENTION of MESSAGE

This is a general purpose example that uses proper command and text format for the VP-1. The commands used do not necessarily have to be used at all times and may be replaced with any of the other commands available. The letter 'n' at the end of some commands represents a variable number selected by the operator.

Message:

Shown as: <BCn CCn Fn>CHYRON VP-1
<EM>

Typed as:

<BCn space-bar CCn space-bar Fn>CHYRON space-bar VP-1 return
<EM>return

Defined as:

<BCn CCn Fn>	- command string first line(starts message)
CHYRON VP-1	- text string for message
<EM>	- command string last line(ends message)

Symbol Definitions:

<	- starts command string(section 4.2.1)
BCn	- command 'Background Color'(section 4.3.2)
CCn	- command 'Character Color'(section 4.3.3)
Fn	- command 'Font'(section 4.4.1)
EM	- command 'End of Message'(section 4.2.2)
>	- ends command string(section 4.2.1)
n	- variable number selected by operater

4.2 MESSAGE CONTROL

In order to output a message from the host computer system to the VP-1, the operator has to use the following commands for control of the message text. If the operator fails to use proper command format, the VP-1 will not recognize the message file for output to the display.

4.2.1 Start of Message

- All commands in the command set can be used to start a message, except 'End of Page' or 'End of Message'. The operator will find that certain commands in this manual are more apt to be used to start a command string than others. All text messages start with a command string and end with either the command 'End of Page' and or 'End of Message'.

4.2.2 End of Message EM

- Allows the operator to end the file that has been created. It is used as the final command at the end of the last page of text, so the operator will be able to output the message file for display. This command must always be in a separate string from all other commands and must also be typed as the last command at the end of a file. If not, the VP-1 will not recognize the file when output from the computer system.

Example: "End of Message"

valid: <>CHYRON VP-1
<EM>

invalid: <EM>CHYRON VP-1

4.2.3 End of Page EP

- Allows the operator to end a page of text for output, so a new page of text can be created. A total message file does not have to be just one page. It can be any number of pages(local memory of the VP-1 is 4000 characters), with each page being separated by the command 'End of Page'. The last page of a multiple page message will always end with the command 'End of Message'.

4.2.3 End of Page:(continued)

Example: "End of Page"

valid:
```
<>CHYRON VP-1
<EP>
TEST
<EM>
```

invalid:
```
<>CHYRON VP-1
<EM>
TEST
<EP>
```

4.2.4 Repeat Message RM(n)

- Allows the operator to repeat a message file for as many times as desired. The message may be repeated indefinitely by typing RM or a specified number of times by typing RMn, where 'n' is the desired number of times for the message to be repeated(1 to 65536). Once the number (n) has been executed, the VP-1 will stop with the last page of text to be displayed. This command may be placed in any location in a command string other than the final command string at the end of message.

Example: "Repeat Message"

valid: Infinite repeating.

```
<RM>CHYRON VP-1
<EP>
TEST
<EM>
```

valid: Finite repeat 3 times.

```
<RM3>CHYRON VP-1
<EP>
TEST
<EM>
```

4.2.5 Page Delay PDn

- Allows the page being displayed to pause before the next page of text is shown. This delay can be timed from 0 to 35536 seconds by the operator. Type PDn, where 'n' is the amount of time desired for the delay on a particular page of text. This command can be placed anywhere in a command string before either 'End of Page' or 'End of Message'. When the page delay command is used, all pages in the file following the command will be delayed the time specified. This will only change when the operator reassigns another page delay value or cancels the page delay by typing PD0.

Example: "Page Delay"

valid: Five second delay, all pages.

```
<>CHYRON VP-1
<PD5 EP>
TEST
<EM>
```

valid: Cancel page delay on second page.

```
<PD5>CHYRON VP-1
<EP>
<PD0>TEST
<EM>
```

invalid:

```
<>CHYRON VP-1
<EP>
TEST
<EM PD5>
```

4.2.6 Default Reset DEF

- Allows the operator to reset all parameters to their default values, without powering down the VP-1 unit(see section 3.6). Type DEF to reset all parameters to their default values, so a new page or message file can be composed. This can help the operator by eliminating the problem of parameters from a previous file corrupting the display of a new file.

Example: The operator wishes to compose a new message file. The previous file had all the margins reassigned. The operator does not want to use these margin parameters in the new file. Rather than power down the VP-1 unit or reassign the margin set, the operator can use the default reset command. This will reset all the parameters, including the margin set, to the default values.

4.2.6 Default Reset:(continued)

It is good practice for the operator to use this command in the starting command string of all message files, to clear all parameters assigned from a previous file. All commands that will set the parameters for the new message page, must be assigned after the default reset command. If they are not, the reset command will cancel the new parameters assigned.

Examples: "Default Reset"

valid: use default reset to reset all parameters.

```
<DEF BC1 CC7 F1>This is
the
CHYRON VP-1
<EM>
```

invalid: All parameters before the reset command are canceled.

```
<BC1 CC7 F2 DEF>This is
the
CHYRON VP-1
<EM>
```

4.3 COLORS

The VP-1 is capable of producing various types of color arrangements for an output file. These color arrangements are known as the 'Color Palette'. They can be used in the background, character color and the edge color, by calling out the corresponding command. These color arrangements are available in 64 different shade selections that are categorized into eight palette colors(0 to 7). The operator has the capability of selecting any of the 64 color shades for use in the text composition(see photographs on page A-1 for Palette Color selections). Only eight of the 64 shades may be selected for use from the Color Palette at one time, for a given page. However, the colors may be changed by the operator at any point for each page.

4.3.1 Color Palette PAn=xyz

- After the internal 'power on' diagnostics have been run and no errors have been detected, the VP-1 displays several characters from the currently installed fonts and rotates the color palette through all possible color combinations(64 shades), while waiting for the first message. Unless the first line of the first message contains a palette assign command(PAn=xyz), the first page of the message will be displayed with the primary palette colors assigned using the default parameters. The palette colors at the default parameters are:

COLOR NO.	COLOR	PALETTE NO.
0	Black	000
1	Blue	003
2	Green	030
3	Cyan	033
4	Red	300
5	Magenta	303
6	Yellow	330
7	White	333

TABLE 4-1

The Palette is always active, with colors being generated by the given Palette colors. The operator may at anytime change the contents of one or all the palette colors by using the command 'Palette Assign', at the start of a new line.

PAn=xyz

n = assigned color number (0 to 7)

x = Red intensity (0 to 3)

y = Green intensity (0 to 3)

z = Blue intensity (0 to 3)

The Palette is divided into three color intensities Red(x), Green(y), and Blue(z), that have intensity values ranging from 0(off) to 3 (maximum intensity). Colors are created by varying the appropriate RGB intensity. By changing the intensity of the RGB values from 0(off) to 3(maximum intensity), 64 different color shades may be produced for text coloring. This will enable the operator to color any part of the background, characters and edge types of a page or message.

4.3.1 Color Palette:(continued)

The contents of the Palette will remain unchanged while the VP-1 is powered on, unless explicitly changed by the operator using the command 'Palette Assign' PAn=xyz. This change in Palette color assignment(0 to 7), will overwrite all previous selections in color assignment for that particular color. There is no check on the assignment of colors to the Palette (0 to 7). The operator could conceivably set all entries to the same color value, causing all displays to be a single color.

The 'Palette Assign' command, may appear anywhere in the command string. It is good practice for the operator to use the top of every new page to change any of the current Palette contents.

Example: "Palette Colors"

valid: Change Palette color 0, from Black(000) to Dark Green(020).

```
<PA0=020 CC0>CHYRON VP-1
<EM>
```

PA0=020	PA	=	Palette Command
	0	=	assign color 0 palette color 020
	0	=	Red value - off
	2	=	Green value - medium intensity
	0	=	Blue value - off

invalid:

1.)
```
<PA0=421>CHYRON VP-1
<EM>
```
PA0=421 only values of 0 to 3 for RGB intensities

2.)
```
<PA8=321>CHYRON VP-1
<EM>
```
PA8=321 only values of 0 to 7 for Palette colors

4.3.2 Background Colors BCn,(y1)

- Allows the operator to pick a background color from the Palette for usage on the entire page or segments of the page. Type BCn(y1), where 'n' is the Palette Color(0 to 7) and (y1) is the optionally designated starting scan line for segmentation of color on the background. The scan lines(0 to 482) represent the vertical spacing boundries in which a page can be composed(see section 4.6). The background colors will remain unchanged for all pages or messages until reassigned by the operator.

BCn,y1	BC	=	Backgound Color
	n	=	Palette Color(0 to 7)
	y1	=	Starting Scan Line for Background Color

Examples: "Background Colors"

valid: Reset default parameters and change background color White(7), to Blue(1).

```
<DEF BC1>CHYRON VP-1
<EM>
```

valid: Change background on second page from Blue(1) to Red(4).

```
<PD3 BC4>CHYRON VP-1
<EP>
<BC1>TEST
<EM>
```

invalid: No designation of scan line points for second color Red(4). The Red(4) background color will overwrite the Blue(1).

```
<BC1 BC4>CHYRON VP-1
<EM>
```

4.3.2 Background Color:(continued)

The optional value y1, is assigned when more than one color is desired in the background. All eight Palette Colors(0 to 7) can be used at the same time and in any variation that is conceivable between the scan lines(0 to 482) for one page. This allows the operator to create a multiple color background for a given text page.

Example:

valid: Use three colors in background; Blue(1),Red(4) and Yellow(6)

```
<BC1,0 BC4,201 BC6,361>CHYRON VP-1
<EM>
```

4.3.3 Character Color CCn

- Allows the operator to assign a color to either characters, words, lines or text from the 8 Palette colors available. Type CCn, where 'n' is the Palette color(0 to 7) to be assigned. The color once assigned will remain the same until changed by the operator. The only time characters can not be different colors in a given word of text is when Edge Types ETB and ETC are used(section 4.5).

4.3.3 Character Color:(continued)

Examples: "Character Colors"

valid: Character Color White(7) for text.

```
<BC1 CC7>CHYRON VP-1
<EM>
```

valid: Character Color White(7) for CHYRON, Red(4) for VP-1.

```
<BC1 CC7>CHYRON_<CC4>VP-1
<EM>
```

(↖ space)

valid: Character Color White(7) for C, Red(4) for HY, Cyan(3) for RON, Yellow(6) for VP-1.

```
<BC1 CC7>C<CC4>HY<CC3>RON_<CC6>VP-1
<EM>
```

(CHYRON NO SPACES)

valid: Change Character Color from White(7) to Yellow(6) for new line.

```
<BC1 CC7>CHYRON VP-1
<CC6>TEXT
<EM>
```

invalid: Can not change character color in words with Edge Types ETB or ETC. Characters will remain the color White(7).

```
<BC1 CC7 ETB,4,4>CHY<CC4>RON VP-1
<EM>
```

4.3.4 Edge Color ECn

- Along with having the ability to assign colors to characters, words, and lines from the Palette, the operator can also assign an edge type(section 4.5) and edge color to a given line of text. Edge color allows the operator to assign a color from the Palette(0 to 7) to the edge type, to show more contrast or enhancement to words, lines or text.

4.3.4 Edge Color:(continued)

The edge color will remain the same as assigned for a given line or text until changed by the operator. Edge color can only be assigned by line, page or message. It can not be assigned to different characters or words of a given line that has been edge typed.

Example: "Edge Color"

valid: Edge Color Black(0) for the given line.

```
<BC1 CC0 ETA6,6 EC7>CHYRON VP-1
<EM>
```

valid: Edge Color changed to Red(4) for second line.

```
<BC1 CC0 ETA6,6 EC7>CHYRON VP-1
<EC4>TEST
<EM>
```

invalid: Two edge colors assigned for one line. Edge color Cyan(3), will overwrite the color White(7) selected.

```
<BC1 CC0 ETA6,6 EC7>CHYRON <EC3>VP-1
<EM>
```

4.4 FONTS

The VP-1 includes two fonts, a digitized 18 line Helvetica Medium and a 30 line Helvetica Bold, both containing full upper case and lower case character sets. Optionally, the VP-1 is capable of carrying up to six fonts which can be used at any time during message composition. Any of the fonts from the Chyron digitized font library may be used in the VP-1 at any time, due to the fact that font chips are removable(section 3.4). The font to be used is selected by command and may also be italicized left or right.

4.4.1 Fonts Fn

- Allows the operator to choose from up to six available fonts for usage in composing text. Type Fn, where 'n' is the desired font(1 to 6) to be used. Fonts may be changed for each character, word, line or page. The font, once selected will remain unchanged for all text, until reassigned by the operator.

4.4.1 Fonts:(continued)

Examples: "Fonts"

valid: Select font(2) for first line.

```
<BC1 CC7 F2 ET0>CHYRON VP-1
<EM>
```

Note: Command 'ET0' is added to example to cancel Edge Type from previous example in section 4.3.4.

valid: Change to font(2) on second line.

```
<BC1 CC7 F1>CHYRON VP-1
<F2>TEXT
<EM>
```

valid: Change to font (2) for word 'VP-1', Change second line back to font(1).

```
<BC1 CC7 F1>CHYRON <F2>VP-1
<F1>TEST
<EM>
```

4.4.2 Italics ITn

- Allows the operator to compose italics for characters, words, lines and or text. Slanting of italicized characters can be accomplished with a slant increment of varying degree, either left(-1 to -5) or right(1 to 5), depending on the amount of slant desired.

Type ITn where 'n' is the desired amount of slant to the italics, right or left. Italics are canceled at the end of each line of text. If it is desired to cancel italics before the end of line, type IT0.

Examples: "Italics"

valid: Italicize the first line slanting moderately to the right.

```
<BC1 CC7 F1 IT1>CHYRON VP-1
<EM>
```

4.4.2 Italics:(continued)

valid: Italicize second line, slanting to the left.

```
<BC1 CC7 F1 IT1>CHYRON VP-1
<IT-1>TEST
<EM>
```

valid: Cancel italics of the word 'VP-1' on first line.

```
<BC1 CC7 F1 IT1>CHYRON <IT0>VP-1
<EM>
```

4.5 EDGE TYPES ETnx,y

The VP-1 gives the operator the ability to enhance the resolution of a particular line, page or text message by creating an edge type color border around the characters on the line. There are three different edge types available that can be colored from any of the Palette Colors(0 to 7):

0(zero)	= no edge type
A	= single offset
B	= continuous drop shadow
C	= full border

Type ETnx,y, where 'n' is the edge type selected and x,y are the width(x) and slope(y) for the border selected. The horizontal and vertical drop of the edge type border selected must be chosen by the operator by using the values x(horizontal width) and y(vertical slope). The amount of drop for an edge type may also be considered the length and direction of the shadow. Once the edge type is selected, it will remain the same for all text until changed by the operator.

4.5.1 Character Offset ETAx,y

- Allows the operator to create an offset shadow to a given line, page or text, which can be varied in length and direction by changing the x and y values. The x value can be positive(slant right) or negative(slant left) on a scale of 1 to 16. The y value can be positve(slope down) from 1 to 16. The more offset shadow desired the greater the x,y values should be.

4.5.1 Character Offset:(continued)

Example: "Character Offset"

valid: Vary character offset border in larger increments for each line.

```
<BC1 CC0 F1 ETA2,2 EC6>CHYRON VP-1
<ETA4,4>CHYRON VP-1
<ETA6,6>CHYRON VP-1
<ETA8,8>CHYRON VP-1
<EM>
```

valid: Edge first line dropping slant right,second line slant left.

```
<BC1 CC0 F1 ETA6,6 EC6>CHYRON VP-1
<ETA-6,6>CHYRON VP-1
<EM>
```

4.5.2 Drop Shadow ETBx,y

- Allows the operator to cast a continuous drop shadow to a given line, word or page of text. The x(width) value can be positive(slant right) or negative(slant left) on a scale of 1 to 16. The y(slope) value can only be positive(slope down) from 1 to 16.

Examples: "Drop Shadow"

valid: Vary Drop Shadow border in larger increments for each line.

```
<BC1 CC0 F1 ETB2,2 EC6>CHYRON VP-1
<ETB4,4>CHYRON VP-1
<ETB6,6>CHYRON VP-1
<ETB8,8>CHYRON VP-1
<EM>
```

4.5.3 Surround Shadow Border ETCx,y

- Allows the operator to create a continuous border around the entire characters on a given line, page or message. The x(horizontal width) and y(vertical width) values for the surround shadow have a given value of 1 to 20 and can only be positive in direction.

Example: "Surround Shadow Border"

valid: Vary Surround Shadow in larger increments for each line.

```
<BC1 CC0 F1 ETC4,4 EC6>CHYRON VP-1
<ETC8,8>CHYRON VP-1
<ETC12,12>CHYRON VP-1
<EM>
```

The VP-1 software program allows the operator to create bar graphs, using the surround shadow border(ETC) and the command DS0. Type ETCx,0 DS0, where 'x' is the length(0 to 1500 pixels) that the edge type will extend to create the desired bar graph. By using the characters 'I' or '.', the above commands will create an exaggerated border edge. This will give the illusion of a bar graph on the display. The bar graph is varied in length, by changing the x value in the command. After the desired length of the graph is determined, the character must be eliminated from the display using the same Palette color as the background. If the character is not taken out, it will appear at the start of the graph and possibly distort the display.

4.5.3 Surround Shadow Border:(continued)

To eliminate the edge type to the left of the character the command DS0 is used. If the DS0 command is not used or is any other value than zero, the character will show as a shadow to the left of the graph. This can possibly cause a distortion to the bar graph effect. This string of commands will not change until reassigned by the operator.

Examples: "Bar Graph"

valid: creates a bar graph 500 pixels long, using the character 'I'.

```
<DEF BC1 CC7 ET0 F1 CL SK20>BAR GRAPH
<SK100  ETC500,0 DS0 CC1 EC6>I
<EM>
```

invalid: character color not changed to match background, character will appear in graph.

```
<DEF BC1 CC7 ET0 F1 CL SK20>BAR GRAPH
<SK100 ETC500,0 DS0 EC6>I
<EM>
```

invalid: DS0 command missing, character will be edged to the left, distorting graph.

```
<DEF BC1 CC7 ET0 F1 CL SK2>BAR GRAPH
<SK100 ETC500,0 CC1 EC6>I
<EM>
```

4.5.4 No Edge Type ET0

- Allows the operator to cancel an edge type on a given line of text in a message page.

Example: "No Edge Type"

valid: Cancel edge type after first line.

```
<BC1 CC0 F1 ETA6,6 EC6>CHYRON VP-1
<ET0>TEST
<EM>
```

4.6 POSITION CONTROLS

The output from the VP-1 can be considered to be composed on a visual graph with an x axis(horizontal), designated in pixels(0 to 1510) and a y axis(vertical), designated in scan lines(0 to 482). The operator with the use of an imaginary locator(called 'The Pointer'), can place text at any location on this graph. After power on, the VP-1 will operate using the assigned Default Parameters for the pointer location and margin sets. These values can be changed by the operator at any time, for composition of text.

When starting to compose a page of text the pointer is located at the top of the page(graph) at the intersection of the top margin(scan line 30) and the left margin(pixel 100). The pointer is moved every time text is added to a line or page. It will always remain at the location of the last typed character, space or return. The pointer will ignore any character or space that is part of a command string, when text is typed.

The pointer can also be moved through a page on the graph by the use of a particular control command. The following sections will explain commands that enable the operator to move the pointer from its current position to a new location on the page. The following sections also explain how to expand or contract on the size of a given page by adjusting the margin sets for the page(section 4.10).

The pointer may be moved anywhere on the page, either left(negative) or right(positive). Once a line is finished, the pointer will not overlap or overwrite text on that line, section or part of the page. The operator must use discretion in the positioning of the pointer with regards to previously written text on a page. If overlapping of text occurs, an invalid text output will occur and text may be distorted on output to the display.

The following commands will only effect the location of the pointer for each command string that they are specified in. Every time the pointer is to be moved other than in its natural progression in text, it must be done with the appropiate command. The commands for the margin sets(section 4.9), once set by the operator, will remain in effect until changed by another margin set command.

Example: The operator wants to skip two lines from the last line printed. The operator has to specify a VP-1 command to skip the two lines. If more than one line is involved, the operator has to specify a command for each line.

Example: The operator changes the top margin from scan line 30 to 50(lowering the top of the page). This change will stay in effect until the operator changes the top margin setting to some other value.

4.7 CENTERING

When the operator desires to have text centered towards the middle of a line or page, two separate commands are available. These commands are 'Center Line' and 'Center Page'. These commands may be used to properly center a new line or page of text, to corresponding text already composed. The operator also has the ability to shift the center point either left or right on a line or page. To move the center point, the operator must realize that the mid-point is the pixel value 1510/2 on the x axis. To move the center point to the left, type in a pixel value for 'n' that is smaller than 1510/2 (755). To move the center point to the right, type a larger value than 1510/2 for 'n'.

Examples: CL = Center line at midpoint at pixel value 755.

CL500 = Center line to the left, at pixel value 500.

CL900 = Center line to the right, at pixel value 900.

4.7.1 Center Line CLn

- Allows the operator to take a given line of text and center that line in reference to the center of the page. Type CL and the given line will be centered on the page(pixel value 755). To move the center point for the line, Type CLn, where 'n' is the pixel value (0 to 1500) on the x axis that the line is to be moved. The Center Line command may move the midpoint either left or right on the page. This command is canceled at the end of every line of text composed.

Examples: "Center Line"

valid: Center second line of text.

```
<BC1 CC7 F1 ET0>CHYRON VP-1
<CL>TEST
<EM>
```

valid: Center first and second lines, but move center of second line to the left, by designating center of line at pixel 400.

```
<BC1 CC7 F1 ET0 CL>CHYRON VP-1
<CL400>TEST
<EM>
```

4.7.2 Center Page CPn

- Allows the operator to center all lines on a given page of text with one command. Type CP to center the entire page of text. Type CPn, where 'n' is the pixel value that the entire page will be shifted either left or right for proper centering of the text. This command is in effect for only the given page of text. It must be restated for each successive page.

Note: It is good practice for the operator to place this command in the first command string for every new page. If not, the 'Center Page' command will only effect the lines stipulated after it.

Examples: "Center Page"

valid: Center page of text.

```
<BC1 CC7 F1 ET0 CP>CHYRON VP-1
TEST
<EM>
```

invalid: Will not center the entire page only the last line.

```
<BC1 CC7 F1 ET0>CHYRON VP-1
TEST ONE
<CP>TEST TWO
<EM>
```

4.8 POSITIONING

As explained in section 4.6, 'POSITION CONTROL', the operator will be able to move the pointer anywhere on a given page with the ability of the following commands. All commands in this section are canceled at the start of a new line or until another or similiar command is given on the existing line being composed.

4.8.1 Skip Up or Down SKn

- Allows the operator to move the pointer either up or down along the y axis(vertical), to position a character, word or entire line on a given page. Type SKn, where 'n' is the scanline value(0 to 482) either up(-n, negative scan line value) or down(+n, positive scan line value) that the pointer is to be moved on the page.

4.8.1 Skip Up or Down:(continued)

Examples: "Skip Up or Down"

valid: Skip 200 scan lines down, for second line.

```
<BC1 CC7 F1 ET0>CHYRON VP-1
<SK200>TEST
<EM>
```

valid: Skip 300 scan lines down for the first word and 200 scan lines up for the second word.

```
<BC1 CC7 F1 ET0 SK300>CHYRON <SK-200>VP-1
<EM>
```

invalid: Overlapping of information between lines. Output display will be distorted.

```
<BC1 CC7 F1 SK100>CHYRON VP-1
<SK-200>TEST
<EM>
```

4.8.2 Forward Space FSn

- Allows the operator to move a character, word or line any number of pixels(0 to 1500) along the x axis(horizontal) for a given line of text. Type FSn, where 'n' is how far the information is to be moved on the line designated in pixels. When the Forward Space command is used more than once on a given line, the pointer starts the next space command from the last given position of the pointer. Example: You move the second word of a line 400 pixels to the center of the page(pixel value 755), you wish to move the next word 200 pixels further down on that line. The operator types FS200 not FS955, because the pointer is positioned at the last word written at pixel 755, the pointer does not return to the beginning of the line at pixel 0.

Examples: "Forward Space"

valid: Move second word 200 pixels, third word 100 pixels.

```
<BC1 CC7 F1 ET0>CHYRON <FS200>VP<FS100>-1
<EM>
```

4.8.2 Forward Space:(continued)

valid: Move various characters and words on the line.

<BC1 CC7 F1 ET0>CHY<FS100>RON <FS200>V<FS20>P-1
<EM>

invalid: Only positive values for forward space. Distortion of characters may occur in the output display.

<BC1 CC7 F1 ET0>CHYRON <FS100>VP<FS-100>-1
<EM>

4.8.3 Back Space BSn

- Similiar to the Forward Space command, only that information per line is shifted to the left on the x axis. Type BSn, where 'n' is the pixel value(0 to 1510) that the character, word or line is to be moved. The pointer in respects to location, follows the same format as seen with the forward space command. The pointer starts in a relative position to its last given location.

The Back Space command is normally used when center line or center page commands are used or when edge type commands cause crowding of characters in a word or a line. It is also used when closer spacing of character pairs is required(Example: NY, NJ, etc.).

Examples: "Back Space"

valid: Backspace second line 200 pixels from center of page.

<BC1 CC7 F1 ET0 CP>CHYRON <CL>VP-1
<BS200>TEST
<EM>

4.8.4 Jump Absolute JMPx,y

- Allows the operator to move the pointer to any x(horizontal) and y(vertical) point on the page. Jump Absolute is a progressive function of the page, meaning that the operator can only jump forward through a page of text. The greater the jump through the page, the farther down the pointer will move in the page. Example: You jump down from the first line on the page to the center of the last line. You can not jump back up through the page. You can only go forward, towards the end of the page.
Type JMPx,y, where 'x' is the horizontal value in pixels(0 to 1510) and 'y' is the vertical value in scan lines(0 to 482). The values of x and y can only be positive.

4.8.4 Jump Absolute:(continued)

Example: "Jump Absolute"

valid: Jump second line to bottom of the page.

```
<BC1 CC7 F1 ET0>CHYRON VP-1
<JMP900,400>TEST
<EM>
```

invalid: X and Y values are reversed.

```
<BC1 CC7 F1 ET0>CHYRON VP-1
<JMP300,600>TEST
<EM>
```

invalid: The x and y values are reversed in direction. Characters may appear to be written off the page on the display.

```
<BC1 CC7 F1 ET0> CHYRON VP-1
<JMP700,300>TEST ONE
<JMP600,200>TEST TWO
<EM>
```

4.8.5 Tab TBn

- Allows the operator to tab informaton for each line of text. Type TBn, where 'n' is the amount of spacing required in pixel values(horizontal, 0 to 1500). The pointer always returns to the start of the line(pixel 0) to implement each tab routine. If the Tab command is used more than once for each line, the pixel values must be in increasing values. If the pixel values for each tab command are not greater in value each time, possible overlapping of text may occur, with the output picture being distorted. The Tab command is an absolute function of the page, similiar to the Jump command.

Examples: "Tab"

valid: Tab first word 100 pixels, second word 700 pixels.

```
<BC1 CC7 F1 ET0 TB100>CHYRON <TB700>VP-1
<EM>
```

invalid: Overlapping occurs between first and second word. Distortion of output display may occur.

```
<BC1 CC7 F1 ET0 TB100>CHYRON <TB600>VP-1
<EM>
```

4.8.6 Line Space LSn

- Allows the operator to vary the spacing between lines of text in the display. Type LSn, where 'n' is the amount of scan lines(-482 to 482) that the line is to be contracted or expanded in the display. The operator should note that the default parameters is 0 scan lines per line of text, for the line space command. This command will stay in effect for all lines of text until reassigned by the operator.

Examples: "Line Spacing"

valid: space lines in text, ten lines apart.

```
<DEF BC1 CC7 ET0 F1 CP SK20 LS10>This is
the
CHYRON VP-1
<EM>
```

Note: Although not illegal, negative scan line values may cause corruption on the display in lines of text. Care should be taken by the operator not to distort the output, when using values less than 4 scan lines in the line space command. A partical range of values for the line space command is -10 to 10.

4.8.7 Character Space SPn

- Allows the operator to vary the intercharacter spacing in any word of the text file. Type SPn, where 'n' is the pixel value(0 to 1500) that the spacing is to be increased or decreased between characters in a given word. The operator should use discretion when using values larger than 20 pixels or less than 2 pixels. Possible distortion of the output display may occur. The default parameter for this command is 6 pixels. This command can also be used to create underlining of characters or words in a text file. The command SPn will remain in effect until reassigned by the operator.

Examples: "Character Space"

valid: Set character space on second line to 50 pixels and 2 pixels on last line of text.

```
<DEF BC1 CC7 F1 ET0 CP SK20>The
<CC6 SP50>CHYRON
<CC7 SP2>IMAGE
<EM>
```

valid: underline the text using the space command.

```
<DEF BC1 CC7 F1 ET0 SK20 CP>CHYRON
<SP0>------------
<SP6>VP-1
<SP0>-------
<EM>
```

4.9 MARGINS

The VP-1 gives the operator the ability to set all margins on the x,y axis for text output. The operator can set left or right margins from 0 to 1500 pixels(x axis) and the top or bottom margins from 0 to 482 scan lines(y axis). This allows the operator to set proper margins for letter style text, if desired for output to the display. Margin commands will remain in effect for all pages of a message. The margins will change when reassigned new values or the VP-1 is powered down.

4.9.1 Top Margin TMARGn

- Allows the operator to set the top margin for a given page. Type TMARGn, where 'n' is the y value(vertical) in scan lines(0 to 482) for the top line of the page. The operator should remember that the top margin is already set at scan line 30, from the default parameters selected at power on.

Examples: "Top Margin"

valid: Change top margin of page to be scan line 90.

```
<DEF BC1 CC7 F1 ET0 TMARG90>CHYRON VP-1
<EM>
```

4.9.2 Bottom Margin BMARGn

- Allows the operator to create a bottom or final line for text per page, other than that assigned from the default parmeters(scan line 452). Type BMARGn, where 'n' is the scan line value(0 to 482) on the y axis, to be used for the last possible line of text per page. All lines that follow past the assigned bottom margin value, will not be output by the VP-1. All lines that pass partially through the bottom margin will be clipped at that location in the display.

4.9.2 Bottom Margin:(continued)

Examples: "Bottom Margin"

valid: Change bottom margin from default parameter 452 to 300.

```
<DEF BC1 CC7 F1 ET0 BMARG300>CHYRON VP-1
<EM>
```

invalid: Bottom margin too high, all lines after second line will be lost.

```
<DEF BC1 CC7 F1 ET0 BMARG300>CHYRON VP-1
<SK200>TEST ONE
TEST TWO
TEST THREE
<EM>
```

4.9.3 Left Margin LMARGn

- Allows the operator to create a uniform line of text that is indented from the left side of the page. Type LMARGn, where 'n' is the x axis value n pixels(0 to 1510) that the left margin is to be placed. The left margin is set from the default parameters at pixel 100.

Examples: "Left Margin"

valid: Change left margin to 300 pixels.

```
<DEF BC1 CC7 F1 ET0 BMARG482 LMARG300>CHYRON VP-1
<EM>
```

4.9.4 Right Margin RMARGn

- Allows the operator to create an end point for each line, for justification of text on a page. Type RMARGn, where 'n' is the pixel value(0 to 1500) on the x axis that the end of line will be placed. The default parameters place the right margin at pixel 1414. If information on a given line extends past the right margin endpoint, that portion of the text will be lost when transmitted to the VP-1 from the computer system.

Examples: "Right Margin"

valid: Change right margin from default(pixel 1414) to pixel 1100.

```
<DEF BC1 CC7 F1 ET0 RMARG1100>CHYRON VP-1
<EM>
```

invalid: Right margin indented too far into text of page, causing text to be lost.

```
<DEF BC1 CC7 F1 ET0 RMARG1000>CHYRON VP-1
<>TEST ONE TWO THREE FOUR
<EM>
```

4.10 KEY COLOR KCn

A Key Color can be selected in order to 'key' over live video. The key color is inactive until selected and will remain in effect until the command is disabled by the operator. Type KCn, where 'n' is the key color selected from the Color Palette(0 to 7) that will become transparent, allowing external video to be shown. Type KD to disable the key color for live video.

The Key Color can be used to key over characters, words, lines, edge types and or backgrounds. Example: The operator wishes to key over the background of a page of text, so the lines of text seem to be written over the external video input. The operator picks a background color of Black(0) and a Key Color of Black(0). This enables the external video to be seen in place of the background color designated.

Examples: "Key Color"

valid: Key color background so lines of text seem to be written over live video background.

```
<DEF BC0 CC7 F1 ET0 KC0>CHYRON VP-1
TEST
<EM>
```

valid: Key color all lines of text so live video seems to be written over a background.

```
<DEF BC1 CC7 F1 ET0 KC7>CHYRON VP-1
<TEST>
<EM>
```

valid: Cancel key color at end of first page.

```
<BC1 CC7 F1 ET0 KC1>CHYRON VP-1
<EP>
<KD>TEST
<EM>
```

If the operator wishes to check a message display using the key color command for live video, the manual key on the external events connector can be used. This function enables the operator to check a message file for errors on the prevue channel(Prevue Out) of the VP-1, before outputting to the display through the program channel(Program A or B).

To use the manual key, use the external events connector on the back of the VP-1(see section 3.0). Connect pins 3 and 4 together to close the circuit. The message file and live video will be output to the prevue channel on the VP-1. When live video is to be output for a program display, the external events manual key must be disconnected(open circuit) for the output to be displayed properly, on the program channels(A or B). If pins 3 and 4 are connected(manual key circuit closed), the live video will be disabled at the program channel ports. The method in which pins 3 and 4 of the external events plug are to be connected, is at the discretion of the operator.

4.11 ROLL RLn

The VP-1 allows the operator to create two types of roll effects, using one command. By using the command 'Roll', the operator can create either a 'waterfall' or 'scroll' effect. Type RLn, where 'n' is the numerical value(1 to 4) for the speed of the roll. The rate of speed is designated in scan lines per minute and is shown in the following chart with the corresponding numerical speed value from 1 to 4.

SPEED NO.	RATE IN SCAN LINES PER MINUTE
1	15 Scan Lines
2	20 Scan Lines
3	30 Scan Lines
4	60 Scan Lines

TABLE 4-2

As shown, RL1 will be the slowest rate, with each successive value gaining in roll speed. The roll command is canceled at the start of every new page in the file.

To create a waterfall effect, the operator uses the roll command and does not skip or space any lines from the first command string, to the first line of text. This will create the illusion of text flowing down the page, from top to bottom.

Example: "Roll"

valid: Roll the page of text using a waterfall effect.

```
<DEF BC1 CC7 ET0 F1 RL4>This is
the
CHYRON VP-1
<EM>
```

When the operator places a space, carriage return or skip command between the first command string(with a roll command included) and the first line of text, a scroll effect will take place. This will give the appearance of text scrolling on to the page from bottom to top.

Example: "Roll"

valid: Scroll effect, by skipping 400 scan lines.

```
<BC1 CC7 ET0 F1 SK400 RL4>
This is
the
CHYRON VP-1
<EM>
```

All edge types which are in effect from a previous page, will be turned off in the page stipulating the roll command. The edge type will be reinstated when reassigned on a following page, after the roll command has finished.

Example:

valid: Three page display with second page using a roll command, suppressing the edge type.

```
<BC1 CC7 F1 ETC4,4 EC0>This is
the
CHYRON VP-1
<EP>
<RL4>This is
the
CHYRON VP-1
<EP>
This is
the
CHYRON VP-1
<EM>
```

Note: It is not recommended to use edge type on a page using a roll command. If an edge type is inserted, the roll speed, will be considerably slowed down on the display. If an edge type is used, it must be stated in the command string after the roll command. Otherwise, it will not be recognized by the VP-1.

When the roll command is used for a message file, the background also rolls with the text. This is evident when the background contains more than one color. The background will roll with the text and repeat on the display, every 482 scan lines. The background will repeat as long as the roll command is in effect.

Note: It is not recommended to use the roll command in a message file containing a background with multiple colors. The background may roll more or less than 482 scan lines, due to the length of the text file. This can cause the background to look uneven or not centered at the end of the roll.

When using a roll command, the contents of a page or written text can effectively be more than one display page long(482 scan lines). The length of a roll page can be as long as the VP-1 memory capacity(4000 characters).

Examples:

valid: Text file shown as two valid examples. One as multiple pages, with out a roll command. The other as a single page text with a roll command.

Without Roll Command

```
<BC1 CC7 F1>This is
the
CHYRON VP-1
<EP>
Test One
1
2
3
<EP>
Test Two
A
B
C
<EM>
```

With Roll Command

```
<BC1 CC7 F1 RL4>This is
the
CHYRON VP-1
Test One
1
2
3
Test Two
A
B
C
<EM>
```

4.12 MANUAL PAGE ADVANCE

The VP-1 allows the operator to cue page changes manually by using two separate types of page control. These control functions are called 'Local' and 'Remote' control.

'Local' control is activated by closing a switch(supplied by the operator), to change a page. This switch can be located on the back of the VP-1(see section 3.0) by the external events plug. By closing the connections on pins 1 and 2 on the external events plug, the operator can cause a manual page advance to occur on the display. This switch must be closed every time a page is to be manually changed. It is recommended to use a normally open momentary switch, for this installation. The signal used to detect the manual page advance is edge sensitive on the VP-1 circuitry.

'Remote' control is activated by using the command string <SW EM>, to manually advance the page. The operator only has to send this command string to the VP-1.

By using these control functions, the operator can display pages of text for any given length of time. These commands can be substituted in the place of the page delay command. The page delay command is disabled when in the manual page advance mode. The differences between the two types of command structures, are that page delay is an automatic page advance and the manual page advance is manually controlled by the operator.

For the VP-1 to recognize either of the above controls for a manual page advance, the operator has to stipulate the command 'WAIT' in the first command string of a multiple page message file. The VP-1 will output the first page of the message and wait for either a local or remote control to output any of the remaining pages. Each time a page is to be changed the operator either depresses the switch(local control) or sends the command string <SW EM>. The advance page mode with the control functions, are canceled at the end of the message.

Example: "Manual Page Advance"

```
valid: <WAIT BC1 CC7 F1 ET0>This is
       the
       CHYRON VP-1
       <EP>
       <BC4 CC6>Test One
       1
       2
       3
       <EP>
       <BC6 CC4>Test Two
       A
       B
       C
       <EM>
```

The operator will send this example to the VP-1 for display. The monitor will display the first page and wait for a control function to advance to the next page in the message. To advance to the next page, the operator will either close the switch for local control or send the message <SW EM>. Follow this procedure until all pages of the message file have been displayed.

When a page or message contains a 'Roll' command, the manual page advance will act in a toggle fashion. This gives the operator the capability to start and stop the roll at any point, as it progresses, to review sections of the page. The first control function output to the VP-1 will start the roll, the next will stop it and so on down the page, until the end of the message.

The wait and roll commands should be used together with caution, since the VP-1 will appear to hang up, during the display. This may actually be the VP-1 waiting for the first manual page advance(Local or Remote control function), to start the message rolling.

SECTION 5

OPERATION WITH YOUR COMPUTER

When connected to any computer system with a serial communications port(RS232C), the CHYRON VP-1 provides the ability to display a text message on a video monitor. The video display is created by the VP-1 with the command set shown in section 4.0. The message file text is created by the host computer system, using a text editor or word processing program.

The VP-1 will only recognize another message file from the host computer system, at the end of the message presently being displayed. When the operator sends a page or message file to the VP-1 for output, the file will be stored in the computer system memory. The file will then be sent to the VP-1, when the existing output display has ended. This means that the operator can not corrupt or interrupt the output display by accidentally overwriting it with another message.

If a 'Repeat Message' command is used, the VP-1 will not recognize the next file until all pages of the present file(which uses the repeat message command) have been displayed at least once. The only message that the VP-1 will recognize to interrupt the message file, is the command string <SW EM>. It will only accept this command string when used in conjunction with the command 'WAIT', at the beginning of the message file(see section 4.12).

5.1 KNOW YOUR TEXT PROGRAM

To use the VP-1 effectively, the operator must first have a full working knowledge of all the functions and capabilities of the word processor program being used. The operator should consult the program operating manual to become proficient in its operation. This should include a working knowledge in entering and editing(insert, delete, and strike over) text into a file and also the storage or retrieval of that file from diskette storage.

When all the capabilities and limitations of the word processing program are known, the operator can create pages of text for the message file. Correct use of the word processor will produce an effective display for output, when used correctly with the VP-1 command set.

5.2 TURN OFF ALL PAGE PARAMETERS

When the message file has been composed by the operator, it is then ready to be transferred to the VP-1 for output to the video display. The message file is transferred to the VP-1 via one of the output serial data ports of the computer system being used. It is essential, that the operator sets all the printer parameters correctly to insure that information is not corrupted during transfer. Depending on the system being used, the printer parameters must either be disabled or set to their maximum or minimum values for the data transfer.

The operator should consult the computer system technical manual for the proper parameter settings for the printer(Example: left margin = 0, right margin = maximum). Note that some computer systems offer a printer disable command. This will turn off the parameters and allow the transfer of data to the VP-1, without any additional spaces or carriage return codes.

If the parameters are not set to their maximum or minimum values or disabled, the computer system can cause the transmission of additional characters. The result will be the corruption of the message file for the display.

Example: The operator has typed a one line text file that has a total of 150 characters. The printer being used, has the right margin parameter set at 130 characters. The operator must either, disable the printer parameters for the margins, set the printer parameters for the right margin to its maximum or separate the text line into two smaller lines(at a point less than 130 characters), using a carriage return, before outputing the message file to the VP-1.

If the operator fails to do any of the above, the word processor program will automatically end the text line at the end of the right margin(character 130), add a carriage return and continue the remainder of the text file on the next line. This could possibly create a disruption in the output, by causing improper spacing of lines or loss of text lines in the display.

SECTION 6

EXERCISES IN SIMPLIFICATION

This section of the operators manual will deal with exercises in simplification of commands and text. The following exercises will show forms of poor command string structure, which will be too long or repetitive. The object of the exercise is to remove unnecessary commands and use simpler terminology for the message text. Note that all examples, even in complex form will work to create message text, but should be composed in the simplest terminology possible.

6.1 EXERCISE #1:

Problem:

```
<DEF BC1 CC7 ETA6,6 EC0 F1>This is
<BC1 CC7 ETA6,6 EC0 F1 SK100>the
<BC1 CC7 ETB6,6 EC0 F1 SK100>CHYRON VP-1
<EM>
```

Solution:

```
<DEF BC1 CC7 ETA6,6 EC0 F1>This is
<SK100>the
<ETB6,6 SK100>CHYRON VP-1
<EM>
```

Explanation:

Line One: No change. This is the starting command string for the message. In the starting command string the operator should initialize all the desired parameters for color, fonts, margins, etc. These parameters only will change when the operator changes a command at some other line of the text.

Line Two: Remove all commands in command string except skip command (SK100). The 'Skip' command', is the only command on line two that has to be designated, because this command is only valid for each new line. All other commands on line two will remain in effect because their parameters have not been changed.

6.1 EXERCISE #1:(continued)

Line Three: Add 'Edge Type' command. The edge type in line three has been changed from a single character offset, to a continuous drop shadow. The 'Edge Type' command must be used with the desired amount of shadow(y1,y2), to change the parameters in line three. The 'Skip' command is also repeated because the operator wishes to lower the third line 100 scan lines from the second line in the message.

Line Four: No change. This is the last line in the command string. The 'End of Message' command is used here to end the message file.

6.2 EXERCISE #2:

Problem:

```
<DEF BC1 CC7 ETA6,6 EC0 F1 IT1 CL>This is
<SK100 BC1 CC7 ETA6,6 EC6 F1 IT1 CL>the
<SK100 BC1 CC4 ETA6,6 EC6 F2IT0 CL>CHYRON VP-1
<EM>
```

Solution:

```
<DEF BC1 CC7 ETA6,6 EC0 F1 IT1 CP>This is
<SK100 EC6 IT1>the
<SK100 F2 CC4>CHYRON VP-1
<EM>
```

Explanation:

Line One: Change 'Center Line' command, to 'Center Page'. The operator has elected to center the text on the center of the page. Instead of typing a center line command for each line, the operator can type a center page command at the beginning of the text. This is also the starting command string for the text, in which all the parameters are designated by the operator.

Line Two: Change 'Edge Type Color'. The type of edging being used has not changed in the text, but the color has. Change the edge color by assigning a new Palette color. Italics are still being used and must be restated. All other parameters have not changed, so commands do not have to be repeated.

6.2 EXERCISE #2:(continued)

Line Three: Change fonts and character color. The parameters are changed using the commands; 'Fonts' and 'Character Color'. The italics do not have to be set to zero for the third line, as they are automatically zero at the start of every new line. All other parameters have not changed.

Line Four: End Of Message. The text has been completed and the 'End of Message' command must be used to finish the message file.

6.3 EXERCISE #3:

Problem:

```
<DEF CP TMARG50 LMARG200 BC1 CC7 F2 ET0 SK50>This is
<SK100 TMARG50 LMARG200 BC1 CC7 F2 ETA6,6 EC0 SK50>the
<SK100 TMARG30 LMARG200 BC1CC7 F2 ETA6,6 EC0 >CHYRON VP-1
<EM>
```

Solution:

```
<DEF CP TMARG50 LMARG200 BC1 CC7 F2 ET0 SK50>This is
<SK100 ETA6,6 EC0 SK50>the
<SK100 TMARG30>CHYRON VP-1
<EM>
```

Explanation:

Line One: No Change. Set up the initial parameters for the message file.

Line Two: Add edge type and color. Using the 'Edge Type' and 'Edge Color' commands, change the existing parameters from no edge type to single character offset. Use the 'Skip' command to move the second line 50 scan lines down from the first. No change in the other parameters, so commands do not have to be repeated.

Line Three: Change top margin. Change the parameters for the 'TMARG' command from 50 to 30 scan lines. All other parameters stay the same.

Line Four: End of Message. Text has been completed, so file must end with 'End of Message' command.

SECTION 7

EXERCISES IN COMPOSITION

To fully understand the functions and capabilities of the VP-1, this section will show explicit examples of text composition and terminology, which will show proper usage of commands and text structure. Each of the following examples will have an explanation of parameters, commands and text and what the proper output of text for display will look like.

The exercise will go through several page variations to build a finalized text message. Each page will progress in complexity from the previous page, with one of the commands and or options(color, italics, edge type, etc.) available being added to the text.

At the end of each exercise the operator will be asked to compile all the individual pages into one text message. The operator will than be asked to simplify the text, so the proper usage of commands will be shown. To help the operator in composing the final page of the various exercises, photographs of each exercise have been included at the end of this manual(see pages A-5 and A-6).

Once the operator has gone through all the text exercises, they should have a full understanding of the VP-1 and its various functions. With this knowledge of command and text structure, the operator is now capable of composing their own pages and text messages.

7.1 EXERCISE #1: Compose a message page reading; CHYRON VP-1, Font One(1) FONT TWO (2)

Procedure: Develop a starting command string, selecting a background and character color. Select a font and use no edging or italics. End the page with the final command string; 'End of Message'.

Parameters:

Background:	Blue(1)
Characters:	Yellow(6)
Fonts:	Two(2)
Edge Type:	None(0)
Edge Color:	None(0)

7.1.1 Page One:(continued)

Message:

```
<DEF BC1 CC6 F2 ET0 SK30>chyron vp-1
font one (1)
font two (2)
<EM>
```

7.1.2 Page Two: 'Center Page'

Procedure: Using the 'Center Page' command, move the entire line of text to the center of the page. Space the lines of text by using the 'Skip' command for positioning, designating a set amount of scan lines for each line.

Parameters: No change

Message:

```
<BC1 CC6 F2 ET0 CP SK30>chyron vp-1
<SK100>font one (1)
<SK100>font two (2)
<EM>
```

7.1.3 Page Three: 'Change Fonts'

Procedure: Using the 'Font' command, change fonts from two(2) to one(1) for line one. Capitalize the phrases 'Chyron VP-1' and 'Font Two'. Depending on the computer system being used by the operator, capital letters can be created by using either the shift or control keys.

7.1.3 Page Three:(continued)

Parameters:

Background:	Blue(1)
Character:	Yellow(6)
Fonts:	One(1) and Two(2)
Edge Types:	None(0)
Edge Color:	None(0)

Message:

```
<BC1 CC6 CP F1 ET0 SK30>CHYRON VP-1
<SK100>Font One (1)
<SK100 F2>FONT TWO (2)
<EM>
```

7.1.4 Page Four: 'Change Background'

Procedure: By using the 'Background' command, assign three different colors to the background. To assign three different colors, the operator must use the scan line locations for the start of each new color(BCn(y1)). Use Blue(1), Green(2) and Red(4) for the background. Once background colors have been selected the operator must check the lines in the text, to be sure that each line is properly centered to the desired background. If the operator does not respace the text using the 'Skip' command, the text will not look proportional to the background.

Parameters:

Background:	Blue(1), Green(2) and Red(4)
Characters:	Yellow(6)
Fonts:	One(1) and Two(0)
Edge Type:	None(0)
Edge Color:	None(0)

7.1.4 Page Four:(continued)

Message:

```
<BC4,0 BC2,121 BC1,361 SK30 CC6 F1 ET0 CP>CHYRON VP-1
<SK120>Font One (1)
<SK130 F2>FONT TWO (2)
<EM>
```

7.1.5 Page Five: 'Add Edge Type'

Procedure: By using the 'Edge Type' and 'Edge Color' commands, add a color border to each line of the text. Use a continuous drop shadow(ETB) on line one, a single character offset (ETA) on line two, and a border edge(ETC) on the last line. Use Black(0) as the edge color for all lines of the text.

Parameters:

Background:	Blue(1), Green(2), and Red(4)
Characters:	Yellow(6)
Fonts:	One(1) and Two(2)
Edge Type:	Character Offset
	Continuous Drop Shadow
	Border Edge
Edge Color:	Black(0)

Message:

```
<BC4,0 BC2,121 BC1,361 ETB6,6 EC0 CC6 CP F1
SK30>CHYRON VP-1
<ETA8,8 SK120>Font One (1)
<ETC4,4 F2 SK130>FONT TWO (2)
<EM>
```

7.1.6 Page Six: 'Change Character and Edge Colors'

Procedure: By using the 'Background' command, add two White lines with a Black border in the text; one line between the Red and Cyan, and one line between the Cyan and Blue. To add the two lines, place them between the starting and end points of the existing background colors(Example: If the Red background ends at scan line 120, insert the new line at scan line 121). Change the background color green(2), to Cyan(3). To change the character and edge colors, assign new colors from the palette(0 to 7) for each line affected(see photograph on page A-2).

Parameters:

Background:	Blue(1), Cyan(3), Red(4), Black(0) and White(7)
Characters:	Blue(1), Magenta(5), and Yellow(6)
Fonts:	One(1) and Two(2)
Edge Types:	Character Offset
	Continuous Drop Shadow
	Border Edge
Edge Colors:	White(7), Yellow(6), and Red(4)

Message:

```
<BC4,0 BC0,113 BC7,115 BC0,121 BC3,123 BC0,353 BC7,355
BC0,361 BC1,363 CP F1 CC1 ETB6,6 EC7>CHYRON VP-1
<SK150 CC5 ETA8,8 EC6>Font One (1)
<SK150 CC6 ETC4,4 EC4 F2>FONT TWO (2)
<EM>
```

7.1.7 Page Seven: 'Combine and Simplify'

Procedure: Take all the pages of the file and combine them together. Take out the 'End of Message' commands from each page(except the final page of text 7.1.6) and replace it with the command 'End of Page'. Add the 'Repeat Message' command to the first command string and 'Page Delay' for each page(delay each page approximately 3 seconds). Now that pages have been combined into one text, use the exercises from Section 6 to simplify the message. Remove all unnecessary commands from the command strings to simplify terminology.

Combined:

```
7.1.1   <BC1 CC6 F2 ET0 SK30>chyron vp-1
        font one (1)
        font two (2)
        <EP>
7.1.2   <BC1 CC6 ET0 F2 CP SK30>chyron vp-1
        <SK100>font one (1)
        <SK100>font two (2)
        <EP>
7.1.3   <BC1 CC6 ET0 F1 CP SK30>CHYRON VP-1
        <SK100>Font One (1)
        <SK100 F2>FONT TWO (2)
        <EP>
7.1.4   <BC4,0 BC2,121 BC1,361 CC6 F1 CP ET0 SK30>CHYRON VP-1
        <SK120>Font One (1)
        <SK130 F2>FONT TWO (2)
        <EP>
7.1.5   <BC4,0 BC2,121 BC1,361 CC6 F1 CP ETB6,6 EC0 SK30>CHYRON
        VP-1
        <SK120 ETA8,8>Font One (1)
        <SK130 F2 ETC4,4>FONT TWO (2)
        <EP>
7.1.6   <BC4,0 BC0,113 BC7,115 BC0,121 BC3,123 BC0,353 BC7,355
        BC0,361 BC1,363 CP F1 CC1 ETB6,6 EC7 SK30>CHYRON VP-1
        <SK150 CC5 ETA8,8 EC6>Font One (1)
        <SK150 CC6 ETC4,4 EC4 F2>FONT TWO (2)
        <EM>
```

7.1.7 Page Seven:(continued)

Simplify:

```
7.1.1   <DEF RM BC1 CC6 F2 ET0 SK30 PD5>chyron vp-1
        font one (1)
        font two (2)
        <EP>
7.1.2   <CP SK30>chyron vp-1
        <SK100>font one (1)
        <SK100>font two (2)
        <EP>
7.1.3   <CP F1 SK30>CHYRON VP-1
        <SK100>Font One (1)
        <SK100 F2>FONT TWO (2)
        <EP>
7.1.4   <BC4,0 BC2,121 BC1,361 SK30 F1 CP>CHYRON VP-1
        <SK120>Font One (1)
        <SK120 F2>FONT TWO (2)
        <EP>
7.1.5   <ETB6,6 EC0 CP SK30 F1>CHYRON VP-1
        <SK120 ETA8,8>Font One (1)
        <SK130 F2 ETC4,4>FONT TWO (2)
        <EP>
7.1.6   <BC4,0 BC0,113 BC7,115 BC0,121 BC3,123 BC0,353
        BC7,355 BC0,361 BC1,363 CP F1 CC1 ETB6,6 EC7>
        CHYRON VP-1
        <SK150 CC5 ETA8,8 EC6>Font One (1)
        <SK150 CC6 ETC4,4 EC4 F2>FONT TWO (2)
        <EM>
```

EXERCISE #1 PICTURE IN AP A-2

7.2 EXERCISE #2: Compose a message page reading; This is the CHYRON VP-1.

7.2.1 Page One: 'Page Formation'

Procedure: Develop a starting command string, selecting a background and character color. Select a font and use no edge type or italics. End the page with the final command string; 'End of Message'.

Parameters:

Background:	Red(4)
Characters:	White(7)
Fonts:	One(1)
Edge Type:	None(0)
Edge Color:	None(0)

Message:

```
<DEF BC4 CC7 F1 ET0 SK30>this is
the
chyron vp-1
<EM>
```

7.2.2 Page Two: 'Italicize and Space Text'

Procedure: Using the 'Italic' command, slant lines to the right(positive). Space lines, by using the 'Skip' and 'Forward Space' commands. The skip command will move the lines, up or down, for a more uniform appearence of text. The forward space command will shift the lines for the desired cascading effect.

Parameters: No Change

Message:

```
<BC4 CC7 F1 ET0 IT1 SK30>this is
<SK80 FS300 IT1>the
<SK120 FS400 IT1>chyron vp-1
<EM>
```

7.2.3 Page Three: 'Change Fonts'

Procedure: Depending on the computer system being used, capitalize the words; This and CHYRON VP-1, with either the control or shift keys on the keyboard. Change fonts on line one and three from two (2) to one (1), using the 'Font' command.

Parameters:

Background:	Red(4)
Characters:	White(7)
Fonts:	One(1) and Two(2)
Edge Type:	None(0)
Edge Color:	None(0)

Message:

```
<BC4 CC7 F1 IT1 SK30 ET0>This is
<F2 IT1 SK80 FS300>the
<IT1 F1 SK120 FS400>CHYRON VP-1
<EM>
```

7.2.4 Page Four: 'Shift Characters'

Procedure: Using the 'Skip' and 'Forward Space' commands, move each letter of the last word in a upward slope to the right. The skip command will use negative values, because letters are being raised up.

Parameters: No Change

Message:

```
<BC4 CC7 IT1 SK30 ET0>This is
<SK80 FS30 IT1 F2>the
<SK100 FS150 IT1 F1>C<SK-20 FS20>H<SK-20 FS20>Y<SK-20 FS20>
R<SK-20 FS20>O<SK-20 FS20>N <SK-20 FS20>V<SK-20 FS20>P<SK-20
FS20>-1
<EM>
```

7.2.5 Page Five: 'Add Edge Type and Color'

Procedure: Using the 'Edge Type' command, add a border edge(ETC) to line one, a continuous drop shadow(ETB) to line two, and a character offset(ETA) to line three. Color the edge type Black(0), using the 'Edge Color' command.

Parameters:

Background:	Red(4)
Characters:	White(7)
Fonts:	One(1) and Two(2)
Edge Types:	Character Offset(ETA)
	Continuous Drop(ETB)
	Border Edge(ETC)
Edge Color:	Black(0)

Message:

```
<BC4 CC7 IT1 F1 ETC6,6 EC0 SK30>This is
<SK80 FS300 IT1 F2 ETB6,6>the
<IT1 F1 ETA8,8 SK100 FS150>C<SK-20 FS20>H<SK-20 FS20>Y
<SK-20 FS20>R<SK-20 FS20>O<SK-20 FS20>N <SK-20 FS20>V
<SK-20 FS20>P<SK-20 FS20>-1
<EM>
```

7 2.6 Page Six: 'Add Background Lines'

Procedure: Using the 'Background' command, insert two White lines in the background color at the top and bottom of the text display.

Parameters:

Background:	Red(4) and White(7)
Characters:	White(7)
Fonts:	One(1) and Two(2)
Edge Types:	Character Offset(ETA)
	Continuous Drop(ETB)
	Border Edge(ETC)
Edge Color:	Black(0)

7.2.6 Page Six:(continued)

Message:

```
<BC4,0 BC7,25 BC4,31 BC7,390 BC4,398 CC7 IT1 F1 ETC6,6
EC0 SK30>This is
<SK80 FS300 IT1 F2 ETB6,6>the
<IT1 ETA8,8 SK100 F1 SK150>C<SK-20 FS20>H<SK-20 FS20>Y
<SK-20 FS20>R<SK-20 FS20>O<SK-20 FS20>N <SK-20 FS20>V
<SK-20 FS20>P<SK-20 FS20>-1
<EM>
```

7.2.7 Page Seven: 'Change All Colors'

Procedure: Change all colors in text display by using the 'Background', 'Character' and 'Edge Color' commands. Change character colors to; Green(2), Yellow(6) and Magenta(5). Change background colors to; Yellow(6), White(7) and Black(0). Change the edge colors to; Blue(1), Black(0) and Red(4)(see photograph on page A-2).

Parameters:

Background:	Yellow(6), Black(0) and White(7)
Characters:	Green(2), Yellow(6) and Magenta(5)
Fonts:	One(1) and Two(2)
Edge Types:	Character Offset(ETA)
	Continuous Border(ETB)
	Border Edge(ETC)
Edge Color:	Blue(1), Black(0) and Red(4)

Message:

```
<BC6,0 BC0,25 BC7,31 BC0,390 BC6,398 CC2 IT1 F1 ETC6,6 EC1
SK30>This is
<SK80 FS300 IT1 F2 ETB6,6 EC0 CC6>the
<IT1 CC5 ETA8,8 EC4 F1 SK100 FS150>C<SK-20 FS20>H<SK-20
FS20>Y<SK-20 FS20>R<SK-20 FS20>O<SK-20 FS20>N <SK-20 FS20>
V<SK-20 FS20>P<SK-20 FS20>-1
<EM>
```

7.2.8 Page Eight: 'Combine and Simplify'

Procedure: Take all the previous pages of the second exercise and combine them in order, to develop a repeating message file. Take out the 'End of Message' command and insert the command 'End of Page'. Add a repeat message command in the first command string and remove all unnecessary commands to simplify terminology. Add a page delay to each page for an even flow of pages through the message.

7.2.8 Page Eight:(continued)

Combine:

7.2.1 <BC4 CC7 F1 ET0 SK30>this is
the
chyron vp-1
<EP>

7.2.2 <BC4 CC7 F1 ET0 IT1 SK30>this is
<SK80 FS300 IT1>the
<SK120 FS400 IT1>chyron vp-1
<EP>

7.2.3 <BC4 CC7 F1 IT1 SK30 ET0>This is
<F2 IT1 SK80 FS300>the
<IT1 F1 SK120 FS400>CHYRON VP-1
<EP>

7.2.4 <BC4 CC7 IT1 F1 ETC6,6 EC0 SK30>This is
<SK80 FS300 IT1 F2>the
<SK100 FS150 IT1 F1>C<SK-20 FS20>H<SK-20 FS20>Y<SK-20 FS20>
R<SK-20 FS20>O<SK-20 FS20>N <SK-20 FS20>V<SK-20 FS20>P
<SK-20 FS20>-1
<EP>

7.2.5 <BC4 CC7 IT1 F1 ETC6,6 EC0 SK30>This is
<SK80 FS300 IT1 F2 ETB6,6>the
<IT1 F1 ETA8,8 SK100 FS150>C<SK-20 FS20>H<SK-20 FS20>Y<SK-20
FS20>R<SK-20 FS20>O<SK-20 FS20>N <SK-20 FS20>V<SK-20 FS20>
P<SK-20 FS20>-1
<EP>

7.2.6 <BC4,0 BC7,25 BC4,31 BC7,390 BC4,398 CC7 IT1 F1 ETC6,6 EC0
SK30>This is
<SK80 FS300 IT1 F2 ETB6,6>The
<IT1 F1 SK100 SK150 ETA8,8>C<SK-20 FS20>H<SK-20 FS20>Y<SK-20
FS20>R<SK-20 FS20>O<SK-20 FS20>N <SK-20 FS20>V<SK-20 FS20>
P<SK-20 FS20>-1
<EP>

7.2.7 <BC6,0 BC0,25 BC7,31 BC0,390 BC6,398 CC2 IT1 F1 ETC6,6 EC1
SL30>This is
<SK80 FS300 IT1 F2 ETB6,6 EC0 CC6>the
<IT1 F1 CC5 ETA8,8 EC4 SK100 FS150>C<SK-20 FS20>H<SK-20 FS20>
Y<SK-20 FS20>R<SK-20 FS20>O<SK-20 FS20>N <SK-20 FS20>V<SK-20
FS20>P<SK-20 FS20>-1
<EM>

7.2.8 Page Eight:(continued)

Simplify:

7.2.1 <DEF RM BC4 CC7 F1 ET0 SK30 PD5>this is
the
chyron vp-1
<EP>

7.2.2 <IT1 SK30>this is
<SK80 FS300 IT1>the
<SK120 FS400 IT1>chyron vp-1
<EP>

7.2.3 <F1 IT1 SK30>This is
<F2 IT1 SK80 FS300>the
<IT1 F1 SK120 FS400>CHYRON VP-1
<EP>

7.2.4 <F1 IT1 SK30>This is
<SK80 FS300 IT1 F2>the
<SK100 FS150 IT1 F1>C<SK-20 FS20>H<SK-20 FS20>Y<SK-20 FS20>
R<SK-20 FS20>O<SK-20 FS20>N <SK-20 FS20>V<SK-20 FS20>P<SK-20
FS20>-1
<EP>

7.2.5 <F1 ETC6,6 EC0 SK30>This is
<SK80 FS300 IT1 F2 ETB6,6>the
<IT1 F1 ETA8,8 SK100 FS150>C<SK-20 FS20>H<SK-20 FS20>Y<SK-20
FS20>R<SK-20 FS20>O<SK-20 FS20>N <SK-20 FS20>V<SK-20 FS20>
P<SK20 FS-20>-1
<EP>

7.2.6 <BC4,0 BC7,25 BC4,31 BC7,390 BC4,398 IT1 F1 ETC6,6 SK30>
This is
<SK80 FS300 IT1 F2 ETB6,6>the
<IT1 F1 ETA8,8 SK100 SK150>C<SK-20 FS20>H<SK-20 FS20>Y<SK-20
FS>R<SK-20 FS20>O<SK-20 FS20>N <SK-20 FS20>V<SK-20 FS20>P
<SK-20 FS20>-1
<EP>

7.2.7 <BC6,0 BC0,25 BC7,31 BC0,390 BC6,398 F1 IT1 ETC6,6 EC1
SK30 CC2>This is
<SK80 FS300 IT1 F2 ETB6,6 EC0 CC6>the
<IT1 F1 CC5 ETA8,8 EC4 SK100 FS150>C<SK-20 FS20>H<SK-20 FS20>
Y<SK-20 FS20>R<SK-20 FS20>O<SK-20 FS20>N <SK-20 FS20>V<SK-20
FS20>P<SK-20 FS20>-1
<EM>

EXERCISE #2 EXAMPLE IN APX A2

7.3 EXERCISE #3 Compose a message page reading; CHYRON VP-1 color palette.

7.3.1 Page One: 'Page Formation'

Procedure: Develop a starting command string, selecting a background and character color. Select a font and use no edge type or italics. End the page with the command 'End of Message'.

Parameters:

Background:	Green(2)
Characters:	White(7)
Fonts:	Two(2)
Edge Type:	None(0)
Edge Color:	None(0)

Message:

```
<DEF BC2 CC7 F2 ET0>chyron vp-1
color palette
color no. color palette
0 black 000
1 blue 003
2 green 030
3 cyan 033
4 red 300
5 magenta 303
6 yellow 330
7 white 333
<EM>
```

7.3.2 Page Two: 'Center Page'

Procedure: Using the 'Center Line' command, center the first and second lines of the text. The remaining lines of text will be centered on the page using the 'Tab' command, at a later point(secton 7.3.5). Use the 'Skip' command to space the lines of the page proportionally.

7.3.2 Page Two:(continued)

Parameters: No Change

Message:

<BC2 CC7 F2 ET0 CL>chyron vp-1
<SK20 CL>color palette
<SK30>color no. color palette
<SK10>0 black 000
1 blue 003
2 green 030
3 cyan 033
4 red 300
5 magenta 303
6 yellow 330
7 white 333
<EM>

7.3.3 Page Three: 'Change Fonts'

Procedure: Using the 'Font' command, change the font on line one from two(2) to one(1). The remaining text will use Font(2). Capitalize the words; CHYRON VP-1, Color Palette, Color No., Color and Palette with either the control or shift key on the host computer system being used.

Parameters:

Background:	Green(2)
Characters:	White(7)
Fonts:	One(1) and Two(2)
Edge Type:	None(0)
Edge Color:	None(0)

7.3.3 Page Three:(continued)

Message:

```
<BC2 CC7 F1 ET0 CL>CHYRON VP-1
<SK20 CL F2>COLOR PALETTE
<SK30>Color No. Color Palette
<SK10>0 black 000
1 blue 003
2 green 030
3 cyan 033
4 red 300
5 magenta 303
6 yellow 330
7 white 333
<EM>
```

7.3.4 Page Four: 'Add Background and Edge Type'

Procedure: Using the 'Background' command, add two Black lines to the existing background. Place the lines between the word 'Color Palette' making sure to evenly space the lines. The Black lines being added should only use approximately 4 scan lines. Add edge type to the text using a Black(0) edge color. Using the 'Edge Type' command, add a border edge to line one, and a continuous drop shadow to the lines of text containing the Palette Colors (0 to 7).

Parameters:

Background:	Green(2) and Black(0)
Characters:	White(7)
Fonts:	One(1) and Two(2)
Edge Type:	Continuous Drop
	Border Edge
Edge Color:	Black(0)

7.3.4 Page Four:(continued)

Message:

```
<BC2,0 BC0,80 BC2,84 BC0,144 BC2,148 CC7 ETC6,6 EC0 CL F1>
CHYRON VP-1
<SK20 CL ET0 F2>COLOR PALETTE
<SK30>Color No. Color Palette
<SK10 ETB3,3 EC0>0 black 000
1 blue 003
2 green 030
3 cyan 033
4 red 300
5 magenta 303
6 yellow 330
7 white 333
<EM>
```

7.3.5 Page Five: 'Tab Page'

Procedure: Using the 'Tab' command, Tab all contents of the Palette under the corresponding title from line three(Example: Color No. = 1, Color = Blue, Palette = 003).

Parameters: No Change

Message:

```
<BC2,0 BC0,80 BC2,84 BC0,144 BC2,148 CC7 ETC6,6 EC0 F1 CL>
CHYRON VP-1
<SK20 ET0 F2 CL>COLOR PALETTE
<SK30>Color No.<TB600>Color<TB1070>Palette
<SK10 ETB3,3 EC0>0<TB600>black<TB1070>000
1<TB600>blue<TB1070>003
2<TB600>green<TB1070>030
3<TB600>cyan<TB1070>033
4<TB600>red<TB1070>300
5<TB600>magenta<TB1070>303
6<TB600>yellow<TB1070>330
7<TB600>white<TB1070>333
<EM>
```

7.3.6 Page Six: 'Change All Colors'

Procedure: By using the appropiate commands, change the background colors from Black(0) and Green(2), to Red(4) and Yellow(6). Change the character colors from Red(4) to Yellow(6), White(7) and Blue(1). The phrase 'COLOR PALETTE' will use all the colors of the Palette(0 to 7) on line two. Add to the edge color, the color Green(2) on line one(see photograph on page A-2).

Parameters:

Background:	Red(4) and Yellow(6)
Characters:	All Palette Colors(0 to 7)
Fonts:	One(1) and Two(2)
Edge Type:	Continuous Drop Shadow Border Edge
Edge Color:	Black(0) and Green(2)

Message:

```
<BC4,0 BC6,80 BC4,84 BC6,144 BC4,148 CC1 ETC6,6 EC2 F1
CL>CHYRON VP-1
<SK20 F2 CL ET0 CC0>C<CC1>O<CC2>L<CC3>O<CC5>R <CC6>P
<CC7>A<CC0>L<CC1>E<CC2>T<CC3>T<CC5>E
<SK30 CC7>Color No.<TB600>Color<TB1070>Palette
<SK10 CC6 ETB3,3 EC0>0<TB600>black<1070>000
1<TB600>blue<TB1070>003
2<TB600>green<TB1070>030
3<TB600>cyan<TB1070>033
4<TB600>red<TB1070>300
5<TB600>magenta<TB1070>303
6<TB600>yellow<TB1070>330
7<TB600>white<TB1070>333
<EM>
```

7.3.7 Page Seven: 'Combine and Simplify'

Procedure: Take all the pages of the file and combine them together. Take out the 'End of Message' commands from each page(except the final page) and replace it with the command 'End of Page'. Add a 'Repeat Message' command to the first comand string of the file. Add a page delay of three seconds for each page of text. Once the pages have been combined, simplify the terminology to remove unnecessary commands from the text.

Combined:

7.3.1 <BC2 CC7 F2 ET0>chyron vp-1
color palette
color no. color palette
0 black 000
1 blue 003
2 green 030
3 cyan 033
4 red 300
5 magenta 303
6 yellow 330
7 white 333
<EP>

7.3.2 <BC2 CC7 F2 ET0 CL>chyron vp-1
<SK20 CL>color palette
<SK30>color no. color palette
<SK10>0 black 000
1 blue 003
2 green 030
3 cyan 033
4 red 300
5 magenta 303
6 yellow 330
7 white 333
<EP>

7.3.7 Page Seven:(continued)

```
7.3.3   <BC2 CC7 F1 ET0 CL>CHYRON VP-1
        <SK20 CL F2>COLOR PALETTE
        <SK30>Color No. Color Palette
        <SK10>0 black 000
        1 blue 003
        2 green 030
        3 cyan 033
        4 red 300
        5 magenta 303
        6 yellow 330
        7 white 333
        <EP>
7.3.4   <BC2,0 BC0,80 BC2,84 BC0,144 BC2,148 CC7 ETC6,6 EC0 F1 CL>
        CHYRON VP-1
        <SK20 CL ET0 F2>COLOR PALETTE
        <SK30>Color No. Color Palette
        <SK10 ETB3,3 EC0>0 black 000
        1 blue 003
        2 green 030
        3 cyan 033
        4 red 300
        5 magenta 303
        6 yellow 330
        7 white 333
        <EP>
7.3.5   <BC2,0 BC0,80 BC2,84 BC0,144 BC2,148 CC7 ETC6,6 EC0 F1 CL>
        CHYRON VP-1
        <SK20 ET0 CL F2>COLOR PALETTE
        <SK30>Color No.<TB600>Color <TB1070>Palette
        <SK10 ETB3,3 EC0>0<TB600>black<TB1070>000
        1<TB600>blue<TB1070>003
        2<TB600>green<TB1070>030
        3<TB600>cyan<TB1070>033
        4<TB600>red<TB1070>300
        5<TB600>magenta<TB1070>303
        6<TB600>yellow<TB1070>330
        7<TB600>white<TB1070>333
        <EP>
```

7.3.7 Page Seven:(continued)

7.3.6 <BC4,0 BC6,80 BC4,84 BC6,144 BC4,148 CC1 CL F1 ETC6,6 EC2>
CHYRON VP-1
<SK20 F2 CL ET0 CC0>C<CC1>O<CC2>L<CC3>O<CC5>R <CC6>P
<CC7>A<CC0>L<CC1>E<CC2>T<CC3>T<CC5>E
<SK30 CC7>Color No.<TB600>Color<TB1070>Palette
<SK10 CC6 ETB3,3 EC0>0<TB600>black<TB1070>000
1<TB600>blue<TB1070>003
2<TB600>green<TB1070>030
3<TB600>cyan<TB1070>033
4<TB600>red<TB1070>300
5<TB600>magenta<1070>303
6<TB600>yellow<TB1070>330
7<TB600>white<TB1070>333
<EM>

Simplify:

7.3.1 <DEF RM BC2 CC7 F2 ET0 PD5>chyron vp-1
color palette
color no. color palette
0 black 000
1 blue 003
2 green 030
3 cyan 033
4 red 300
5 magenta 303
6 yellow 330
7 white 333
<EP>

7.3.2 <CL>chyron vp-1
<SK20 CL>color palette
<SK30>color no. color palette
<SK10>0 black 000
1 blue 003
2 green 030
3 cyan 033
4 red 300
5 magenta 303
6 yellow 330
7 white 333
<EP>

7.3.7 Page Seven:(continued)

```
7.3.3   <CL>CHYRON VP-1
        <SK20 CL F2>COLOR PALETTE
        <SK30>Color No. Color Palette
        <SK10>0 black 000
        1 blue 003
        2 green 030
        3 cyan 033
        4 red 300
        5 magenta 303
        6 yellow 330
        7 white 333
        <EP>
7.3.4   <BC2,0 BC0,80 BC2,84 BC0,144 BC2,148 ETC6,6 EC0 F1 CL>
        CHYRON VP-1
        <SK20 CL ET0 F2>COLOR PALETTE
        <SK30>Color No. Color Palette
        <SK10 ETB3,3 EC0>0 black 000
        1 blue 003
        2 green 030
        3 cyan 033
        4 red 300
        5 magenta 303
        6 yellow 330
        7 white 333
        <EP>
7.3.5   <ETC6,6 F1 CL>CHYRON VP-1
        <SK20 ET0 CL F2>COLOR PALETTE
        <SK30>Color No.<TB600>Color<TB1070>Palette
        <SK10 ETB3,3 EC0>0<TB600>black<TB1070>000
        1<TB600>blue<TB1070>003
        2<TB600>green<TB1070>030
        3<TB600>cyan<TB1070>033
        4<TB600>red<TB1070>300
        5<TB600>magenta<TB1070>303
        6<TB600>yellow<TB1070>330
        7<TB600>white<TB1070>333
        <EP>
```

7.3.7 Page Seven:(continued)

```
7.3.6     <CL BC4,0 BC6,80 BC4,84 BC6,144 BC4,148 CC1 ETC6,6
          EC2 F1>CHYRON VP-1
          <F2 SK20 CL ET0 CC0>C<CC1>O<CC2>L<CC3>O<CC5>R <CC6>P
          <CC7>A<CC0>L<CC1>E<CC2>T<CC3>T<CC5>T<CC6>E
          <SK30 CC7>Color No.<TB600>Color<TB1070>Palette
          <SK10 CC6 ETB3,3 EC0>0<TB600>black<1070>000
          1<TB600>blue<TB1070>003
          2<TB600>green<TB1070>030
          3<TB600>cyan<TB1070>033
          4<TB600>red<TB1070>300
          5<TB600>magenta<TB1070>303
          6<TB600>yellow<TB1070>330
          7<TB600>white<TB1070>333
          <EM>
```

EXAMPLE #3 IN APPX

7.4 EXERCISE #4

In this final exercise, the operator will take the last page of each of the previous exercises and combine them into one message file. This exercise will show the operator the types of messages the VP-1 is capable of outputing for display. Add a five second page delay to each page and repeat the message indefinitely.

```
7.2       <RM BC6,0 BC0,25 BC7,31 BC0,390 BC6,398 CC2 IT1 F1 ETC6,6
          EC1 SK30 PD5>This is
          <SK80 FS300 IT1 F2 ETB6,6 EC0 CC6>the
          <IT1 F1 CC5 ETA8,8 EC4 SK100 FS150>C<SK-20 FS20>H<SK-20
          FS20>Y<SK-20 FS20>R<SK-20 FS20>O<SK-20 FS20>N <SK-20 FS20>
          V<SK-20 FS20>P<SK-20 FS20>-1
          <EP>
7.1       <BC4,0 BC0,113 BC7,115 BC0,121 BC3.123 BC0,353 BC7,355
          BC0,361 BC1,363 CP F1 CC1 ETB6,6 EC7>CHYRON VP-1
          <SK150 CC5 ETA8,8 EC6>Font One (1)
          <SK150 CC6 ETC8,8 EC4 F2>FONT TWO (2)
          <EP>
7.3       <CL BC4,0 BC6,80 BC4,84 BC6,144 BC4,148 CC1 ETC6,6
          EC2 F1>CHYRON VP-1
          <F2 SK20 CL ET0 CC0>C<CC1>O<CC2>L<CC3>O<CC5>R <CC6>P
          <CC7>A<CC0>L<CC1>E<CC2>T<CC3>T<CC5>E
```

```
7.3     <SK30 CC7>Color No.<TB600>Color<TB1070>Palette
        <SK10 CC6 ETB3,3 EC0>0<TB600>black<TB1070>000
        1<TB600>blue<TB1070>003
        2<TB600>green<TB1070>030
        3<TB600>cyan<TB1070>033
        4<TB600>red<TB1070>300
        5<TB600>magenta<TB1070>303
        6<TB600>yellow<TB1070>330
        7<TB600>white<TB1070>333
        <EM>
```

SECTION 8

WARRANTY INFORMATION

CHYRON Video Cable Products warrants this product, except as provided below, to be free from defects in material and workmanship for a period of ninety days from the date of the original delivery date to the end user provided the Warranty Registration Card is returned to CHYRON within 30 days of the delivery date to the end user. No charge will be made for warranty service, provided the equipment is returned prepaid to the CHYRON service facility in Melville, New York. This warranty does not include responsibility for any transportation or handling expense.

CHYRON Video Cable Products reserves the right to make changes in design and improvements upon its product without assuming any obligation to install the same upon any of its products previously manufactured.

CHYRON Video Cable Products' obligations under this warranty are limited to supplying the purchaser only with replacement parts for those which prove defective. In no event shall CHYRON Video Cable Products be liable for any consequential, incidental or special damages.

CHYRON Video Cable Products does not accept any responsibility in connection with any of its products or component parts which have been altered outside of its own factory or by anyone other than an authorized representative of CHYRON Video Cable Products. If the purchaser shall use, or allow to be used in the product, parts not made or supplied by CHYRON Video Cable Products, except such components as may be specified by CHYRON Video Cable Products, then this warranty shall become void. This warranty shall become void if CHYRON Video Cable Products shall inspect the equipment and find it to have been modified, improperly installed or misused.

Except as herein specifically set forth, CHYRON makes no other express warranties with respect to the product. It is expressly understood that the warranty herein set forth shall be in lieu of all warranties of fitness and all warranties of merchantability.

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